



**SECOND QUARTER 1993 PROGRESS REPORT
L.E. CARPENTER SITE
WHARTON, NEW JERSEY**

Prepared on behalf of L.E. CARPENTER AND COMPANY
for the New Jersey Department of Environmental
Protection and Energy

September 1993

W.O. No.: 06720-013-002

Prepared by:

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346077



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L.E. CARPENTER QUARTERLY REPORT

1.0 GROUNDWATER ACTIVITIES

1.1 Groundwater Level Measurements

Water level and product thickness measurements were conducted at all of the monitoring wells at the L.E. Carpenter Site on 24 June 1993. Water level measurements were also conducted at eight (8) staff gauges and at the RP-1 measurement point on the concrete wall adjacent to the Rockaway River. Surface water elevations were determined by measuring the vertical distance between the top of the staff gauge (or paint mark) and the water surface. In general, water levels were much lower due largely to lack of precipitation and elevated temperatures which occurred prior to the elevation measurements.

1.2 Groundwater Sampling

Groundwater monitoring wells MW-4, MW-14S, MW-22 and MW-25 were sampled for benzene, toluene, ethylbenzene and xylene (BTEX) analysis (EPA Method 602) on 24 June 1993. Dedicated Well Wizard bladder pumps were utilized to purge a minimum of three well volumes prior to sampling from groundwater monitoring wells MW-4, MW-14S, MW-22 and MW-25. The samples were placed in 40-ml glass vials and preserved at 4°C in a sample cooler for overnight shipment to the laboratory.

All samples were shipped with the necessary trip and field blanks to the WESTON Analytical Laboratory in Lionville, PA via overnight courier under a WESTON chain-of-custody.

1.3 Product Recovery

Product recovery pumps for MW-6 and MW-10 were returned from the manufacturer and reinstalled by WESTON personnel on 9 June 1993. The product recovery system has been fully operational since then and approximately 100 gallons of product has been recovered during the second quarter of 1993.



2.0 RESULTS

2.1 Groundwater Elevation Data

Groundwater level elevation data for the 24 June 1993 measurement round are presented in Table 1 in Appendix A and equipotential maps for the shallow, intermediate and deep zones are presented in Appendix B for those wells with measurable product. Water table depression caused by the floating product layer was corrected using the method presented in previous quarterly reports (see WESTON, April 1992).

2.2 BTEX Analytical Results

The full data package for groundwater samples collected from MW-4, MW-14, MW-22 and MW-25 are presented in Appendix C. The data is summarized in Table 2-1. The highest BTEX concentration was detected in MW-22 (1.340 ppm total). BTEX was detected in MW-4 at low levels (0.0046 ppm total) and was not detected in MW-14 and MW-25.



TABLE 2-1

**SUMMARY OF BTEX ANALYTICAL RESULTS
SECOND QUARTER 1993
L.E. CARPENTER SITE, WHARTON, NEW JERSEY**

Parameter	Concentration (ppm)			
	MW-4	MW-14S	MW-22	MW-25
Benzene	.001 U	.001 U	.010 U ¹	.001 U
Toluene	.0022	.001 U	.340	.001 U
Ethylbenzene	.001 U	.001 U	.010 U ¹	.001 U
Xylene	.0024	.002 U	1.0	.001 U

Data Qualifiers

U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.

¹ = Sample dilution factor of 10.



3.0 DISCUSSION

3.1 Groundwater Flow Measurements

Groundwater and product levels were measured at each monitoring well, well point, and stream gauge on June 24, 1993. Appendix A presents the water level and product thickness data. Equipotential maps of the shallow, intermediate, and deep aquifer zones are presented in Figures 1, 2, and 3, respectively in Appendix B.

Data acquired during this event were compared to findings from the April 26, 1993 measurement event (first quarter 1993). At each monitoring point (monitoring well, well point, and staff gauge), groundwater elevations declined from the first quarter within the shallow, intermediate, and deep aquifer zones. On average, a decline of approximately two feet was noted at the monitoring points. The most significant fluctuation was measured at MW-13S, where a 5.13 feet decline in head was measured.

Equipotential maps for the three aquifer zones were constructed based on data obtained during the June 26, 1993 measurement event. These maps were compared to equipotential maps presented in earlier quarterly reports. Groundwater flow in the shallow aquifer zone measured during this reporting period is fairly consistent with that found in the first quarter 1993. Within the intermediate zone, groundwater flow is generally toward the east; however, when compared to the first quarter 1993 report, it is more pronounced in a southeasterly direction. Groundwater flow within the deep aquifer zone differs from the groundwater flow direction presented in the equipotential map presented in the first quarter 1993 report. Groundwater flow direction in this quarter is toward the northwest, similar to the flow direction presented in the equipotential map of the deep aquifer presented in the fourth quarter 1992 report.

3.2 Summary

The analytical results for the second quarter 1993 are presented in Table 2-1. A summary of analytical data collected since second quarter 1992 is presented in Table 3-1. Toluene and xylene were detected in MW-22 at a concentration of .340 and 1.0 ppm, respectively. In comparison with recent analytical data, the level of xylene is present at a level higher than the first quarter of 1993 (.440 ppm); however, it is significantly lower than the concentration detected throughout 1992. Toluene has not been detected in MW-22 since the second quarter of 1992 (.0027 ppm) suggesting a pattern of seasonal variation due to the decrease in precipitation. A slight increase in toluene has also been observed in MW-4 (.0022 ppm) as compared to being undetected in recent quarters; however, levels of ethylbenzene and xylene have decreased. Benzene, toluene, ethylbenzene and xylene were not detected in MW-14S and MW-25.

TABLE 3-1

COMPARISON OF MONITORING WELL DATA SINCE SECOND QUARTER 1992
L.E. CARPENTER

All results in mg/l (ppm)

	<u>2ndQ92</u>	<u>3rdQ92</u>	<u>4thQ92</u>	<u>1stQ93</u>	<u>2ndQ93</u>
MW-4					
Benzene	.001U	.001U	.001U	.001U	.001U
Toluene	.001U	.001U	.001U	.001U	.0022
Ethylbenzene	.033	.002N	.0039	.012	.001U
Xylene	.083	.029Y	.006	.0054	.0024
MW-14S					
Benzene	.001U	.001U	.001U	.001U	.001U
Toluene	.001U	.001U	.001U	.001U	.001U
Ethylbenzene	.034	.001U	.001U	.001U	.001U
Xylene	.160	.002U	.002U	.014	.002U
MW-22					
Benzene	.002	.001U	.001U	.001U	.010U*
Toluene	.0027	.001U	.001U	.001U	.340
Ethylbenzene	2.50	.001U	.470	.120	.010U*
Xylene	20.0	1.50	2.60	.440	1.0
MW-25					
Benzene	.001U	.001U	.001U	.001U	.001U
Toluene	.001U	.001U	.001U	.001U	.001U
Ethylbenzene	.001U	.001U	.001U	.013	.001U
Xylene	.002U	.002U	.002U	.024	.002U
MW-15S					
Benzene	.001U	na	na	.001U	na
Toluene	.001U	na	na	.001U	na
Ethylbenzene	.001U	na	na	.280	na
Xylene	.002U	na	na	.810	na

*- Sample Dilution Factor of 10

U- Undetected

Y- Compound confirmed present

N- Compound not confirmed present

REFERENCES

WESTON, 1992. Second Quarter 1992 Progress Report, L.E. Carpenter Site, Wharton, New Jersey. Report prepared for the New Jersey Department of Environmental Protection and Energy on behalf of L.E. Carpenter & Co., Cincinnati, OH.

APPENDIX A

WATER LEVEL AND PRODUCT THICKNESS DATA

TABLE 1. DEPTH TO WATER, WATER LEVEL ELEVATION AND PRODUCT THICKNESS DATA,
MEASURED ON JUNE 24, 1993, L.E. CARPENTER SITE, WHARTON, NJ.

WELL	MEASURING PT. ELEVATION (FT MSL)	DEPTH TO PRODUCT (FT)	DEPTH TO WATER (FT)	PRODUCT THICKNESS OR SHEEN OBSERVATIONS (FT)	OBSERVED WATER LEVEL ELEVATION (FT MSL)	CORRECTED WATER LEVEL ELEVATION * (FT MSL)
MW-001	638.97	13.84	14.55	0.71	624.42	625.03
MW-002	633.39		8.79	SHEEN	624.60	624.60
MW-003	632.27	7.80	7.98	0.18	624.29	624.44
MW-004	632.31		7.70	none	624.61	624.61
MW-005	632.20		7.07	none	625.13	625.13
MW-006	632.77		8.10	none	624.67	624.67
MW-007	630.68		5.46	none	625.22	625.22
MW-008	630.56		5.10	none	625.46	625.46
MW-009	631.69		6.50	none	625.19	625.19
MW-010	633.65		9.00	none	624.65	624.65
MW-11S	632.96	8.30	13.80	5.50	619.16	623.89
MW-11I	632.82		8.15	none	624.67	624.67
MW-11D	632.42		5.50	none	626.92	626.92
MW-12S	633.18	problem with probe, product coated			633.18	633.18
MW-12I	633.06		8.44	none	624.62	624.62
MW-13S	631.23		6.18	none	625.05	625.05
MW-13I	630.66		6.09	none	624.57	624.57
MW-14S	628.41		4.20	none	624.21	624.21
MW-14I	628.23		3.80	none	624.43	624.43
MW-14D	628.53		1.68	none	626.85	626.85
MW-15S	636.77		11.69	none	625.08	625.08
MW-15I	636.66		11.59	none	625.07	625.07
MW-16S	634.47		8.80	none	625.67	625.67
MW-16I	634.96		9.35	none	625.61	625.61
MW-17S	634.79		9.59	none	625.20	625.20
MW-17D	634.86		9.65	none	625.21	625.21
MW-18S	631.26		6.93	none	624.33	624.33
MW-18I	631.04		5.93	none	625.11	625.11
MW-18D	630.77		4.46	none	626.31	626.31
MW-019	638.88		12.92	none	625.96	625.96
MW-020	636.77		11.10	none	625.67	625.67
MW-021	628.80		4.61	none	624.19	624.19
MW-022	628.74		4.30	none	624.44	624.44
MW-023	630.64		3.80	none	626.84	626.84
MW-024	629.03		3.35	none	625.68	625.68
MW-025	627.33		3.05	none	624.28	624.28
RW-001	637.38		12.36	SHEEN	625.02	625.02
RW-002	631.68		7.20	none	624.48	624.48
RW-003	631.99		7.35	SHEEN	624.64	624.64
GEI-1I	630.78		5.58	none	625.20	625.20
GEI-2S	637.67		11.75	none	625.92	625.92
GEI-2I	638.20		11.91	none	626.29	626.29
GEI-3I	639.85		14.10	none	625.75	625.75

* Estimated water level elevation calculated using a product specific gravity of 0.86.

TABLE 1, CONTINUED. DEPTH TO WATER, WATER LEVEL ELEVATION AND PRODUCT THICKNESS DATA,
MEASURED ON JUNE 24, 1993, L.E. CARPENTER SITE, WHARTON, NJ.

WELL POINT	MEASURING PT. ELEVATION (FT MSL)	DEPTH TO PRODUCT (FT)	DEPTH TO WATER (FT)	PRODUCT THICKNESS OR SHEEN OBSERVATIONS (FT)	OBSERVED WATER LEVEL ELEVATION (FT MSL)	CORRECTED WATER LEVEL ELEVATION * (FT MSL)
WP-A1	635.81	10.65	10.80	0.15	625.01	625.14
WP-A2	639.20		14.25	none	624.95	624.95
WP-A3	635.56		10.32	none	625.24	625.24
WP-A4	635.10	9.95	11.90	1.95	623.20	624.88
WP-A5	637.85		12.95	none	624.90	624.90
WP-A6	637.28	12.25	14.15	1.90	623.13	624.76
WP-A7	634.88	9.80	12.50	2.70	622.38	624.70
WP-A8	637.56	12.60	15.00	2.40	622.56	624.62
WP-A9	639.45		14.79	SHEEN	624.66	624.66
WP-B1	633.65	8.70	9.55	0.85	624.10	624.83
WP-B2	632.25		7.45	none	624.80	624.80
WP-B3	633.33	8.22	13.00	4.78	620.33	624.44
WP-B4	631.92	8.22	10.10	1.88	621.82	623.44
WP-B5	632.11	7.25	8.35	1.10	623.76	624.71
WP-B6	631.86	6.85	7.10	0.25	624.76	624.98
WP-B7	629.49	5.15	7.00	1.85	622.49	624.08
WP-B8	629.29		6.10	none	623.19	623.19
WP-B9	632.37	7.64	9.15	1.51	623.22	624.52
WP-B10	632.63		7.88	none	624.75	624.75
WP-C1	634.44		9.75	none	624.69	624.69
WP-C2	634.46		9.00	none	625.46	625.46
WP-C3	632.64		7.73	none	624.91	624.91
WP-C4	634.59		9.85	none	624.74	624.74

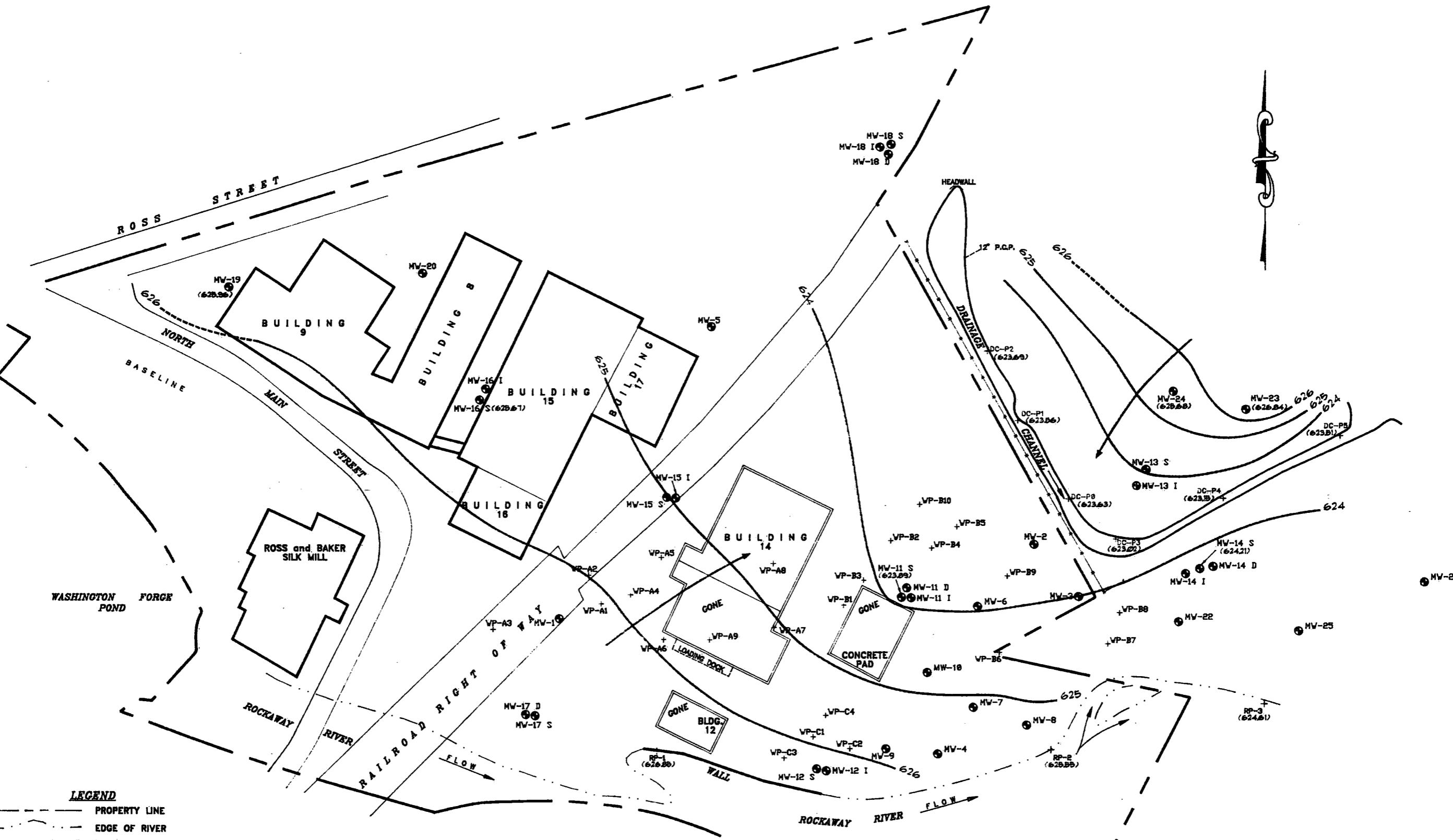
* Estimated water level elevation calculated using a product specific gravity of 0.86.

MEASURING POINT	ELEVATION OF MEASURING POINT	DEPTH TO WATER	WATER LEVEL ELEVATION
DC-P0	625.75	2.10	623.65
DC-P1	625.26	1.70	623.56
DC-P2	626.79	3.10	623.69
DC-P3	625.22	2.20	623.02
DC-P4	625.10	1.95	623.15
DC-P5	625.16	1.65	623.51
RP-01	629.65	2.80	626.85
RP-02	627.75	2.20	625.55
RP-03	627.11	2.50	624.61



APPENDIX B

EQUIPOTENTIAL MAPS



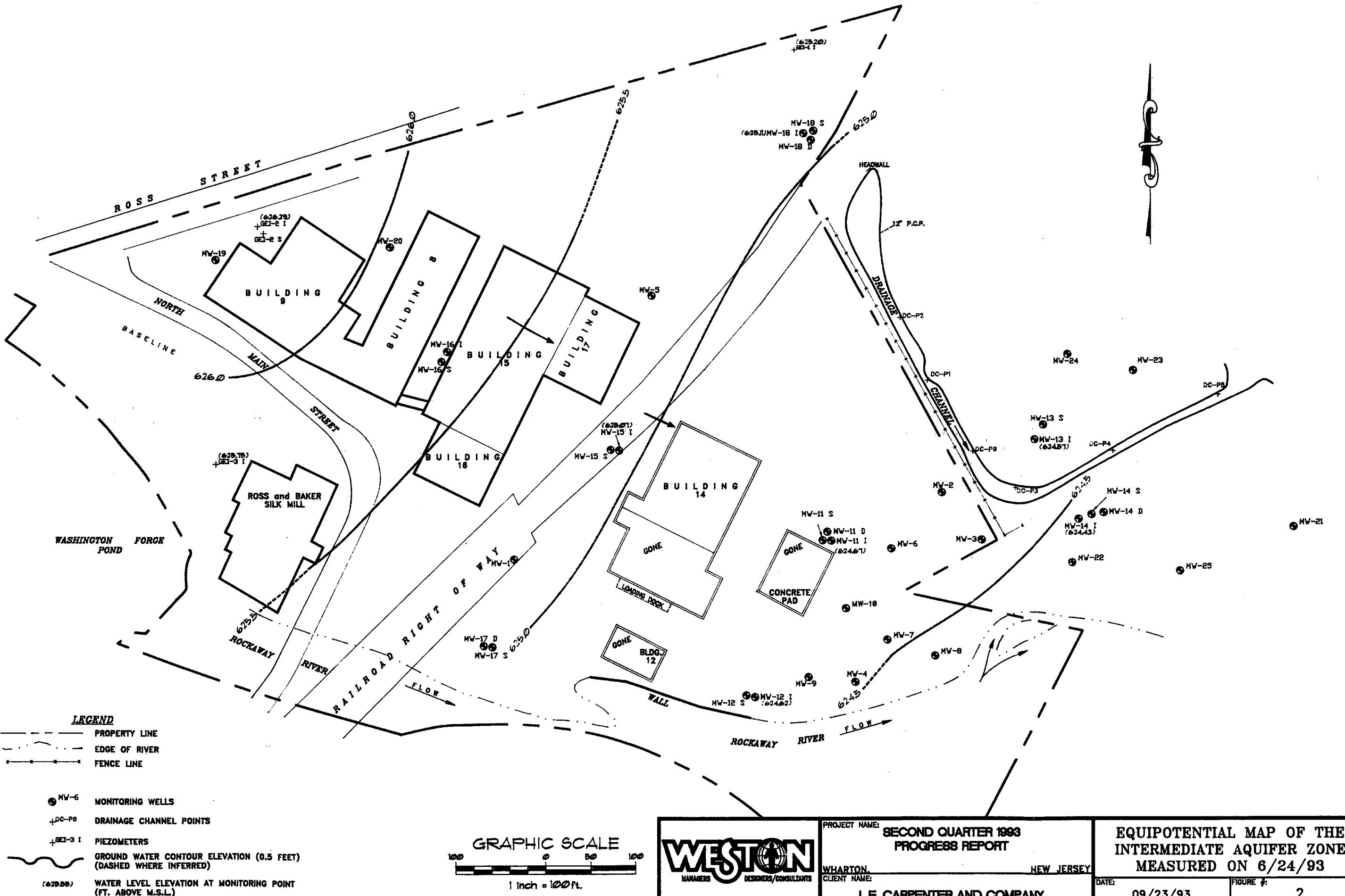
LEGEND

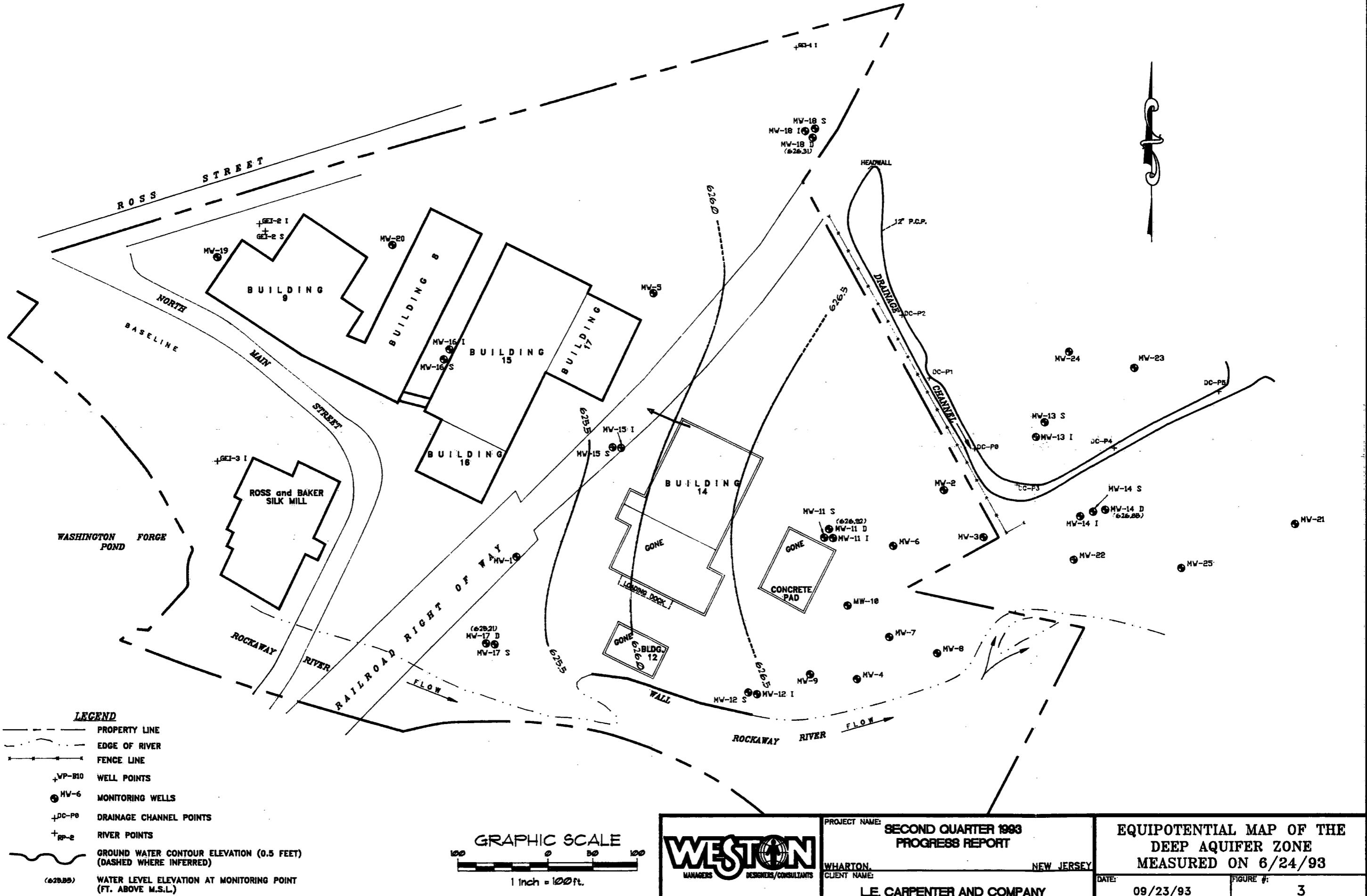
- PROPERTY LINE
- EDGE OF RIVER
- FENCE LINE
- + WP-B10 WELL POINTS
- (●) MW-6 MONITORING WELLS
- + DC-P6 DRAINAGE CHANNEL POINTS
- + RP-2 RIVER POINTS
- GROUND WATER CONTOUR ELEVATION (1 FOOT)
(DASHED WHERE INFERRED)
- WATER LEVEL ELEVATION AT MONITORING POINT
(FT. ABOVE M.S.L.)

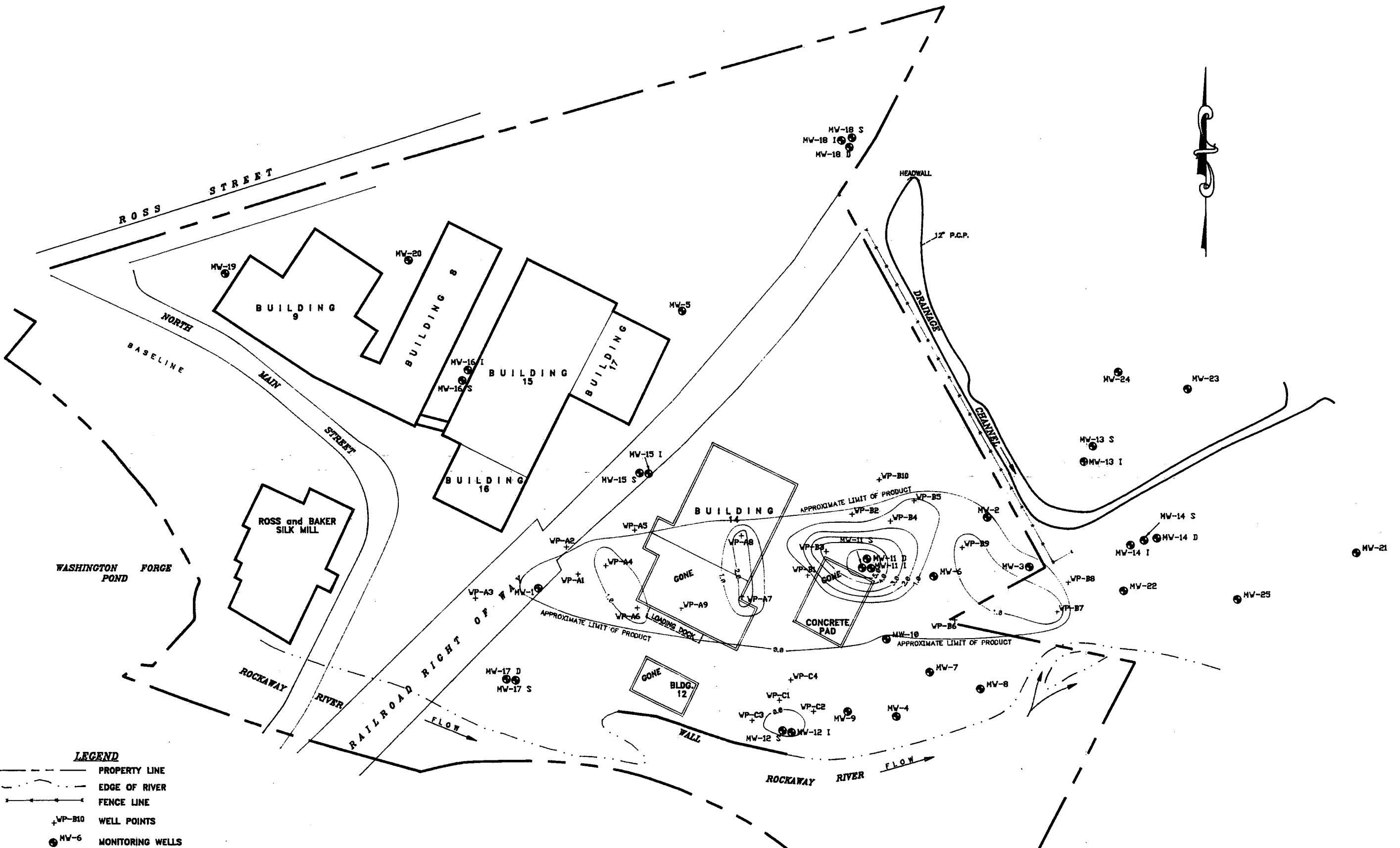


PROJECT NAME: **SECOND QUARTER 1993 PROGRESS REPORT**
WHARTON, NEW JERSEY
CLIENT NAME: **LE CARPENTER AND COMPANY**

EQUIPOTENTIAL MAP OF THE SHALLOW AQUIFER ZONE
MEASURED ON 6/24/93
DATE: 09/23/93 FIGURE #: 1







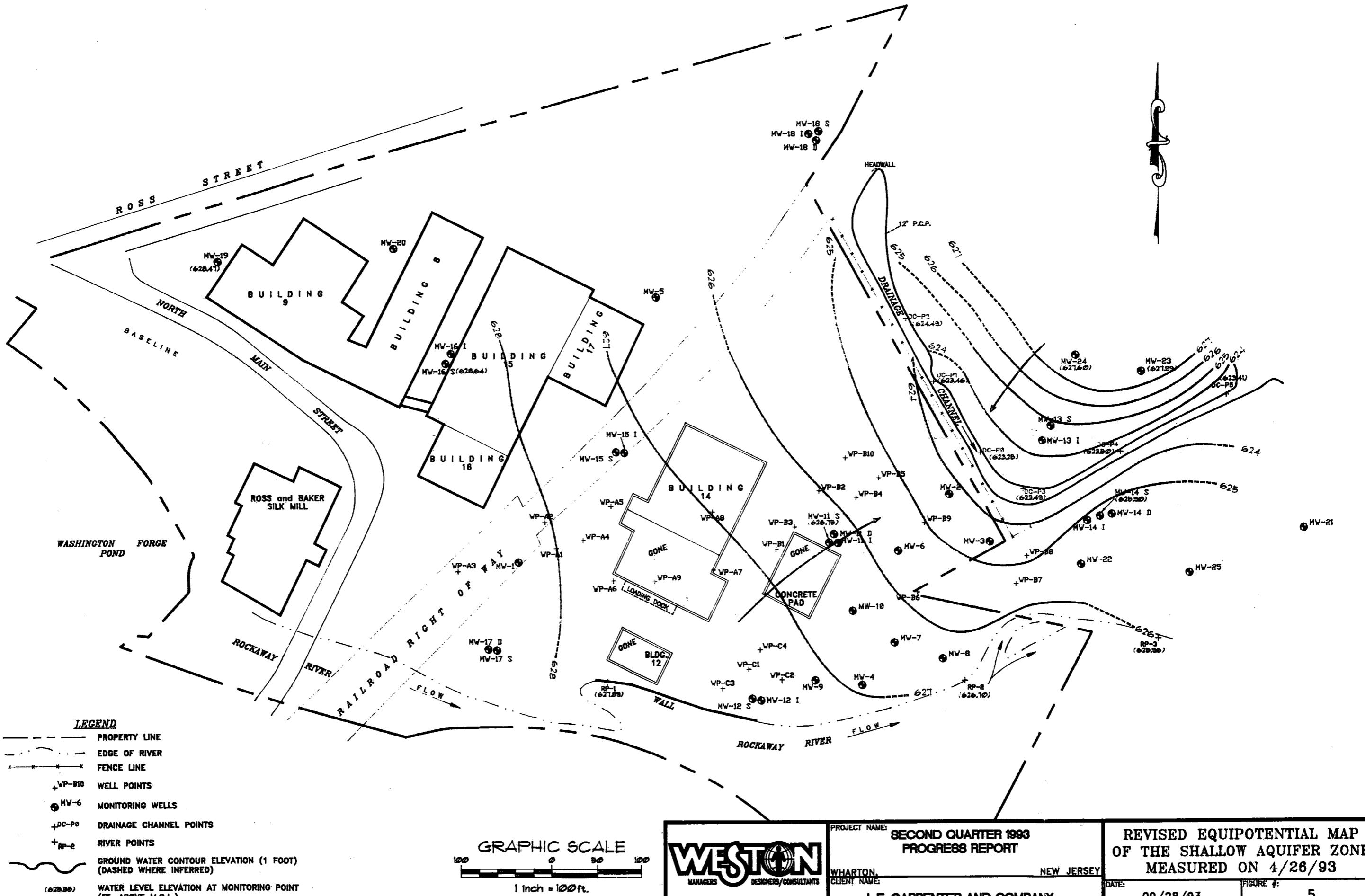
FILE NUMBER: 0000 DATE: 09/24/93 DRAWN BY: J. DREZ



PROJECT NAME:	SECOND QUARTER 1993 PROGRESS REPORT
WHARTON CLIENT NAME:	NEW JERSEY
LE, CARPENTER AND COMPANY	DATE: 09/24/93

ISOPACH MAP OF
PRODUCT THICKNESS
MEASURED 6/24/93

FIGURE #: 4





APPENDIX C

BTEX ANALYTICAL RESULTS



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WESTON.

CHAIN OF CUSTODY

0001

Custody Transfer Record/Lab Work Request

WESTON ANALYTICS INC.

Page 1 of 2

WILMINGTON

Client	L. E. Cooper		Refrigerator #	351	
Est. Final Proj. Sampling Date	06-20 - 013 - 001 - 0002 - 00		#Type Container	Liquid	Solid
Work Order #	OC-2021-001-0002-00		Volume	Liquid	UDM
Project Contact/Phone #	Mike Young - 906453710		Preservatives	Solid	NH3
AD Project Manager	Mike Young				
QC	CLP				
Date Rec'd	07/25/2021		Date Due	7/29/2021	
Account #			TAT	30 DAY	
ANALYSES REQUESTED →					
MATRIX CODES:			VOA	ORGANIC	
S - Soil			BNA	Pesticides	Herb.
SE - Sediment					
SO - Solid					
SL - Sludge					
W - Water					
O - Oil					
A - Air					
DS - Drum					
DL - Drum Solids					
L - Liquids					
EPRCLP					
Leachate					
WI - Wipe					
X - Other					
F - Fish					
FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS					
Special Instructions:					
BTEX Method 602					
DATE REVISIONS:					
1. _____					
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
WESTON Analytics Use Only					
Samples were: COC Tape was: 1) Shipped <input checked="" type="checkbox"/> or <input type="checkbox"/> Present on Outer Hand Delivery <input checked="" type="checkbox"/> or <input type="checkbox"/> Package Y or N Airbill # <input checked="" type="checkbox"/> or <input type="checkbox"/> Unbroken on Outer					
2) Ambient or Chilled <input checked="" type="checkbox"/> or <input type="checkbox"/> Package Y or N 3) Received in Good Condition <input checked="" type="checkbox"/> or <input type="checkbox"/> Sample Y or N 4) Labels indicate Properly Preserved <input checked="" type="checkbox"/> or <input type="checkbox"/> Sample Y or N 5) Received Within Holding Time <input checked="" type="checkbox"/> or <input type="checkbox"/> Upon Sample Rec'd NOTES: <input checked="" type="checkbox"/> COC Record Present Upon Sample Rec'd <input checked="" type="checkbox"/> or N					

Retirnished by	Received by	Date	Time	Retirnished by	Received by	Date	Time
CWSD	ML	7/25/2021	16:43	ML	ML	7/25/2021	16:43

RFN 21-21-001A-791

T-OMP = 0.2

WESTON.

DATA SUMMARY

0003

Cust ID:	MW-4	MW-4	MW-4	MW-148	MW-22	MW-22	MW-22
Sample Information	RFW#: Matrix: D.F.: Units:	001 WATER 1.00 UG/L	001 MS WATER 1.00 UG/L	001 MSD WATER 1.00 UG/L	002 WATER 1.00 UG/L	003 WATER 10.0 UG/L	003 DL WATER 100 UG/L
Benzene	1.0 U	87 %	84 %	1.0 U	10 U	NA	NA
Ethylbenzene	2.2	90 %	87 %	1.0 U	340	NA	NA
Toluene	1.0 U	87 %	84 %	1.0 U	10 U	NA	NA
Xylene (total)	2.4	83 %	80 %	2.0 U	2.0 U	2.0 U	1000

Cust ID:	MW-25		TBLK	BLK	BLK BS
Sample Information	RFW#: Matrix: D.F.: Units:	004 WATER 1.00 UG/L	005 WATER 1.00 UG/L	93LV4302-MB1 WATER 1.00 UG/L	93LV4302-MB1 WATER 1.00 UG/L
aaa-Trifluorotoluene	84 %	84 %	99 %	93 %	93 %
Benzene	1.0 U	1.0 U	1.0 U	89 %	89 %
Ethylbenzene	1.0 U	1.0 U	1.0 U	90 %	90 %
Toluene	1.0 U	1.0 U	1.0 U	87 %	87 %
Xylene (total)	2.0 U	2.0 U	2.0 U	90 %	90 %

U= Analyzed, not detected. J= Present below detection limit. B= Present in blank. NR= Not requested. NS= Not spiked.
 %= Percent recovery. D= Diluted out. I= Interference. NA= Not Applicable. *= Outside of EPA CLP QC

GC-VOA

SURROGATE RECOVERY (%) CONTROL LIMITS

COMPOUND	BLANKS, BS/BSD	WATER MS/MSD	SOILS MS/MSD
Bromochloromethane	60-130	60-140	40-130
aaa-Trifluorotoluene	70-130	60-140	40-130

SPIKE RECOVERIES (%) CONTROL LIMITS
MIX B EFFECTIVE DATE: 04-01-93

COMPOUND	BLANKS, BS/BSD	WATER MS/MSD	SOILS MS/MSD
trans-1,2-Dichloroethene	64-136	73-106	33-117
1,2-Dichloroethane	71-128	47-137	36-114
1,1,1-Trichloroethane	71-129	71-120	50-106
Bromodichloromethane	76-124	67-131	27-107
cis-1,3-Dichloropropene	64-136	70-126	22-108
trans-1,3-Dichloropropene	64-136	59-118	20-95
Bromoform	73-126	32-132	5-104
1,1,2,2-Tetrachloroethane	49-151	30-175	0-176
Benzene	77-123	71-112	36-101
Toluene	77-122	68-114	18-114
Ethylbenzene	63-137	72-127	9-106
Xylenes (total)	49-148	68-123	6-100

WESTERN

CASE NARRATIVE

0006



ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: LE CARPENTER
RFW #: 9306L018

W.O. #: 06720-013-001-0002-00
Date Received: 06-25-93

GC VOLATILE

The set of samples consisted of five (5) water samples collected on 06-24-93.

The samples were analyzed according to criteria set forth in Method 602 for Specified Aromatic Volatile Organic target compounds on 06-30-93 and 07-01-93.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All surrogate recoveries were within laboratory control limits.
2. All matrix spike recoveries were within laboratory control limits.
3. All blank spike recoveries were within method control limits.
4. Sample MW-22 required 10-fold and 100-fold dilutions because it contained high levels of target compounds.

Sample MW-22 was not analyzed without dilution because of possible instrument contamination; consequently, Benzene and Toluene had elevated detection limits.

5. The Toluene recovery (84%) in the final calibration (CCV) was outside CCV limits ($\pm 15\%$); there was no impact on the data because Toluene was not detected in the samples.

J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

07.14.93

Date

DATA QUALIFIERS

- U = Compound was analyzed for but not detected. The associated numerical value is the estimated sample quantitation limit which is included and corrected for dilution and percent moisture.
- J = Indicates an estimated value. This flag is used either when estimating a concentration for tentatively identified compounds where a 1:1 response is assumed or when the mass spectral data indicate the presence of a compound that meets the identification criteria but the result is less than the specified detection limit but greater than zero; for example, if the limit of detection is 10 ug/L and a concentration of 3 ug/L is calculated, it is reported as 3J.
- B = This flag is used when the analyte is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination. This flag is also used for a TIC as well as for a positively identified TCL compound.
- E = Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
- I = Interference.
- N = Not Confirmed.
- Y = Confirmed Positive.

ABBREVIATIONS

- BS = Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
- BSD = Indicates blank spike duplicate.
- MS = Indicates matrix spike.
- MSD = Indicates matrix spike duplicate.
- DL = Indicates that surrogate recoveries were not obtained because the extract had to be diluted for analysis.
- NA = Not applicable.
- DF = Dilution factor.
- NR = Not required.

WESTEN.

QC SUMMARY

2
WATER VOLATILE SURROGATE RECOVERY

Lab Name: Roy F. Weston, Inc.

Contract: 6720-13-01

Case No.: LE CARPENTER

RFW Lot No.: 9306L018

	CLIENT SAMPLE NO.	S1 (TFT) #	S2 () #	S3 () #	OTHER	TOT OUT
01	MW-4	98				0
02	MW-4MS	93				0
03	MW-4MSD	89				0
04	MW-14S	81				0
05	MW-22	88				0
06	MW-22DL	79				0
07	MW-25	84				0
08	TBLK	84				0
09	BLKLV4302-MB1	99				0
10	BLKLV4302-MB1 BS	93				0

S1 (TFT) = aaa-Trifluorotoluene

QC LIMITS
(60-140)

Column to be used to flag recovery values

* Values outside of QC limits

D Surrogates diluted out

bmg 7/12/93

3A
WATER VOLATILE MATRIX SPIKE/MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: Roy F. Weston, Inc.

Contract: 6720-13-01

Case No.: LE CARPENTER

RFW Lot No.: 9306L018-001

MATRIX Spike - Sample No.: MW-4

Level: (low/med) LOW

COMPOUND	SPIKE ADDED UG/L	SAMPLE CONCENTRATION UG/L	MS CONCENTRATION UG/L	MS % REC #	QC LIMITS REC
Benzene	20.0	0.0920	17.5	87	77 -123
Ethylbenzene	20.0	2.23	20.2	90	63 -137
Toluene	20.0	0.498	17.4	87	77 -123
Xylene (total)	20.0	2.40	19.0	83	49 -148

COMPOUND	SPIKE ADDED UG/L	MSD CONCENTRATION UG/L	MSD % REC #	% RPD #	QC LIMITS RPD REC
Benzene	20.0	16.8	84	3	50 77 -123
Ethylbenzene	20.0	19.5	87	3	50 63 -137
Toluene	20.0	16.8	84	3	50 77 -123
Xylene (total)	20.0	18.5	80	3	50 49 -148

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

RPD: 0 out of 4 outside limits

Spike Recovery: 0 out of 8 outside limits

COMMENTS:

1/11/93

3A
WATER VOLATILE BLANK SPIKE RECOVERY

Lab Name: Roy F. Weston, Inc.

Contract: 6720-13-01

Case No.: LE CARPENTER

RFW Lot No.: 9306L018

BLANK Spike - Sample No.: BLKLV4302-MB1

Level: (low/med) LOW

COMPOUND	SPIKE ADDED UG/L	SAMPLE CONCENTRATION UG/L	BS CONCENTRATION UG/L	BS % REC #	QC LIMITS REC
Benzene	20.0	0.0550	17.8	89	77 -123
Ethylbenzene	20.0	0	18.0	90	63 -137
Toluene	20.0	0	17.4	87	77 -123
Xylene (total)	20.0	0	18.0	90	49 -148

Column to be used to flag recovery value with an asterisk

* Values outside of QC limits

Spike Recovery: 0 out of 4 outside limits

COMMENTS:

6/17/87

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: Roy F. Weston, Inc.

Contract: 6720-13-01

Case No.: LE CARPENTER

Lab File ID: RAW1:FU344487

Lab Sample ID: 93LV4302-MB1

Date Analyzed: 06/30/93

Time Analyzed: 1802

Matrix: (Soil/Water) WATER

Level: (low/med) LOW

Instrument ID: 43

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	CLIENT SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	MW-4	9306L018-001	06/30/93	18:59
02	MW-4MS	9306L018-001S	06/30/93	19:57
03	MW-4MSD	9306L018-001T	06/30/93	20:55
04	MW-14S	9306L018-002	06/30/93	21:53
05	MW-22	9306L018-003	06/30/93	23:18
06	MW-22DL	9306L018-003	06/30/93	22:50
07	MW-25	9306L018-004	07/01/93	01:44
08	TBLK	9306L018-005	07/01/93	02:42
09	BLKLV4302-MB1 BS	93LV4302-MB1S	06/30/93	15:49

COMMENTS:

SAMPLE DATA
in increasing RFW# order

GC VOLATILES SHEET

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

MW-4

Client: LE CARPENTERMatrix: WATERLab Sample ID: 9306L018-001Sample wt/vol: 5.00 (g/mL) MLLab File ID: FU344522Level: (low/med) LOWDate Received: 06/25/93

% Moisture: not dec.

Date Analyzed: 06/30/93Column: (pack/cap) PACKDilution Factor: 1.00

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

71-43-2-----Benzene	1.0	U
100-41-4-----Ethylbenzene	2.2	
108-88-3-----Toluene	1.0	U
1330-20-7-----Xylene (total)	2.4	

Aug 21/93

12/88 Rev.

0015

9306L018-001

151165
151165

SAMPLE NO. : 06309343

TEST NO. :

METHOD NO. : 43B / 43B

.06

INSTRUMENT: 43

DATE TIME: 06/30/93 18:59:45

PAGE NO. : 01

100. 00

90. 00

80. 00

70. 00

60. 00

50. 00

40. 00

30. 00

20. 00

10. 00

0. 00

7. 91
9. 49
13. 26
14. 37
17. 03
18. 20

20. 94
21. 55
22. 80
23. 90
24. 80
25. 68
26. 48
27. 35
28. 22
29. 19
30. 79
31. 08
32. 28
33. 63
34. 28
35. 63
36. 16
37. 37
38. 04

alpha-Terpinolene

Ethyl Benzoate

m-xylene

0.00 4.50 9.00 13.50 18.00 22.50 27.00 31.50 36.00 40.50 45.00

RETENTION TIME (MINUTES)

Y MAXIMUM: 53876.

START TIME: 0. 00

Y MINIMUM: 49946.

END TIME: 45. 00

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 06309343 .06
 TEST : 0602X
 COLLECTION TIME : 44.92
 METHOD: 43B / 43B REV #: 00004 ANALYST: HOCKERM SAMP RATE: 0.78
 CLIENT ID: MW-4 SAMPLE VOL: 5.0 ML
 CLIENT: LE CARPENTER COLUMN TYPE: 1%SP1000, PID
 LAB ID: 9306L018-001 RAW FILE: RAW1:FU344522
 SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL RT	GR MINUTES #	COMPONENT NAME	HEIGHT CONC PPB
001	37939	677		7.910		
002	24090	176	T	9.493		
003	7066	426	V	11.990 13.258	TRANS-1,2-DICHLOROET	
004	23270	1489		14.395	1 MTBE	0.557 NOT Target
005	5478	359	T	17.030	1 CIS-1,3-DCPE	0.265 NOT Target
006	10253	598	V	18.202	1 BENZENE	0.092 u
007	27162	1164	V	20.938		
008	4608	391	V	21.548		
009	17792	1078	V	22.800		
010	434790	36572	V	23.895	1 aaa-TRIFLUOROTOLUENE	19.530
011	40038	2861		24.796	1 TOLUENE	0.498 u
012	90176	4899	T	25.660		
013	50611	3369		26.204		
014	66982	2949	T	27.468		
015	181312	7519	V	28.077	1 ETHYLBENZENE	2.226
016	105331	4956		29.345		
017	32410	1872	T	30.418		
018	169101	7115	V	30.922		
019	48461	2100	V	31.785		
020	135245	4886	V	33.080	1 M - XYLENE	1.925
021	24448	961	V	34.283	1 O - XYLENE	0.473 TOTAL > 2.398
022	109440	2756		35.630		
023	39309	956	T	38.162		
024	190016	1701	T	41.367		
025	35430	646		43.037		
				39.770	1 1,2-DICHLOROBENZENE	

Sample Calculation

Ethylbenzene Hght ÷ CAF. fact. = ppb
 ↓ ↓ ↓
 7519 ÷ 3375.5 = 2.22 u 7/6/93

GC VOLATILES SHEET

CLIENT SAMPLE NO.

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

MW-14S

Client: LE CARPENTERMatrix: WATER Lab Sample ID: 9306L018-002Sample wt/vol: 5.00 (g/mL) ML Lab File ID: FU344600Level: (low/med) LOW Date Received: 06/25/93% Moisture: not dec. Date Analyzed: 06/30/93Column: (pack/cap) PACK Dilution Factor: 1.00CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

71-43-2-----	Benzene	1.0	U
100-41-4-----	Ethylbenzene	1.0	U
108-88-3-----	Toluene	1.0	U
1330-20-7-----	Xylene (total)	2.0	U

6/14/95 12/88 Rev.

0018

9306L018-002

11/10/93

0010

SAMPLE NO. : 06309343

.09

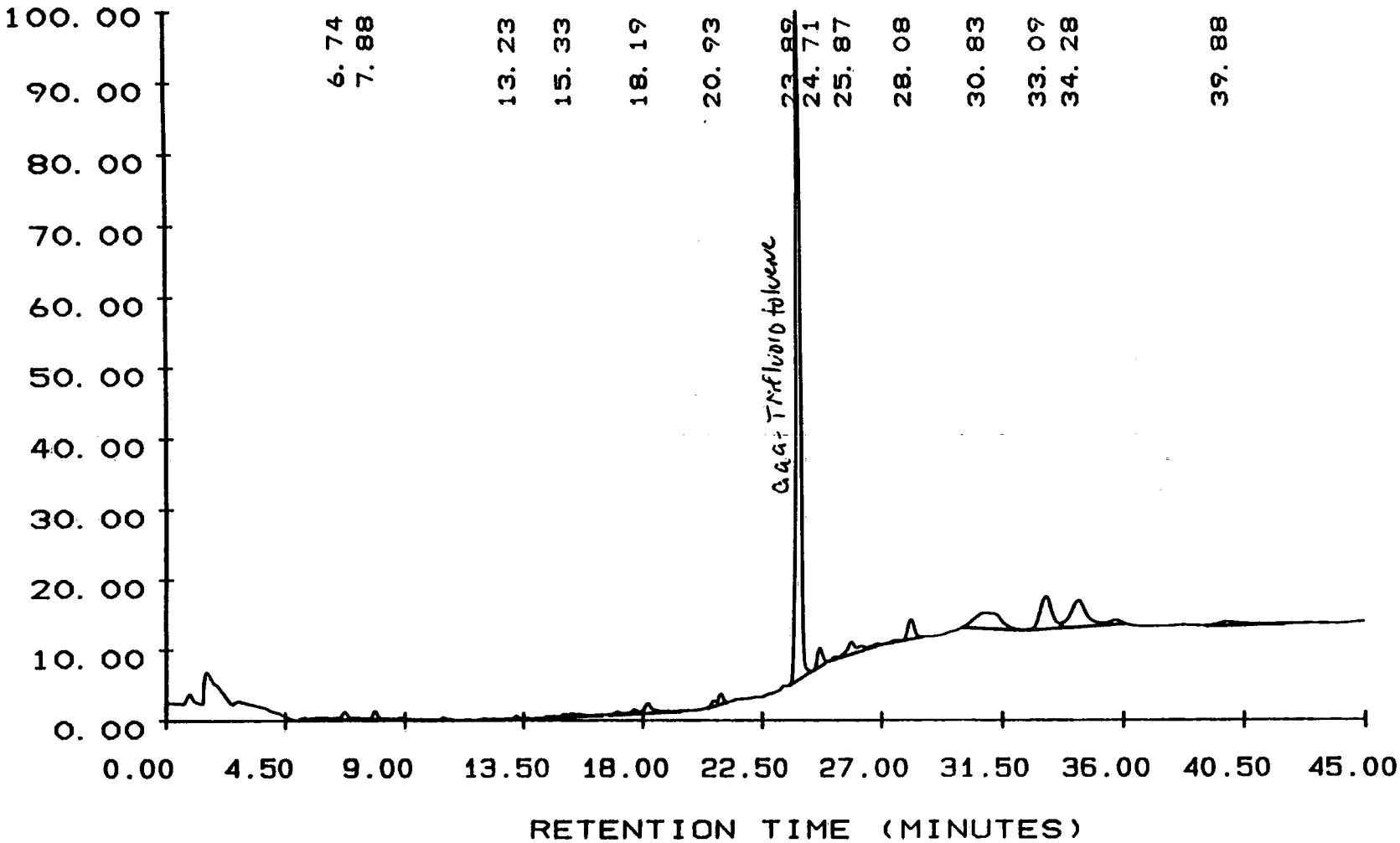
INSTRUMENT: 43

TEST NO. :

DATE TIME: 06/30/93 21:53:07

METHOD NO. : 43B / 43B

PAGE NO.: 01



Y MAXIMUM: 53249.

START TIME: 0.00

Y MINIMUM: 49996.

END TIME: 45.00

Roy F. Weston, Inc. - Lionville Laboratory

06/30/93 22:38:30

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 06309343 .09

INST:43 VIAL:FO SEQ NUMBER:009

TEST : 0602X

DATE-TIME INJECTED : 06/30/93 21:53:07

COLLECTION TIME : 44.92

DATE-TIME PROCESSED : 06/30/93 22:38:30

METHOD: 43B / 43B REV #: 00004 ANALYST: HOCKERM SAMP RATE: 0.78

CLIENT ID: MW-14S

SAMPLE VOL: 5.0 ML

CLIENT: LE CARPENTER

COLUMN TYPE: 1%SP1000, PID

LAB ID: 9306L018-002

RAW FILE: RAW1:FU344600

SAMPLE WT :

% MOISTURE :

DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	13568	337	T	6.743			
002	5158	366		7.875			
003	3174	147	V	13.226	1	TRANS-1,2-DICHLOROET	
				14.380	1	MTBE	
004	8051	140	V	15.326			
				17.101	1	CIS-1,3-DCPE	
005	14400	435		18.187	1	BENZENE	0.067 u
006	8730	448	V	20.933			
007	354266	30429	V	23.887	1	aaa-TRIFLUOROTOLUENE	16.249
008	10842	801		24.706	1	TOLUENE	0.139 u
009	17702	540		25.872			
010	16742	902		28.082	1	ETHYLBENZENE	0.267 u
011	49190	733	V	30.832			
012	43981	1512	T	33.087	1	M - XYLENE	0.596 DIAL 1.19 → u
013	54989	1221		34.282	1	O - XYLENE	0.601 DIAL *
014	8614	158		39.875	1	1,2-DICHLOROBENZENE	0.141 *

* NOT A TARGET Compound

7/16/93

0020

CLIENT SAMPLE NO.

GC VOLATILES SHEET

MW-22

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001Client: LE CARPENTERMatrix: WATERLab Sample ID: 9306L018-003Sample wt/vol: 5.00 (g/mL) MLLab File ID: FU344646Level: (low/med) LOWDate Received: 06/25/93% Moisture: not dec. Date Analyzed: 06/30/93Column: (pack/cap) PACKDilution Factor: 10.0

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

<u>CAS NO.</u>	<u>COMPOUND</u>		
<u>71-43-2-----</u>	<u>Benzene</u>	<u>10</u>	<u>U</u>
<u>100-41-4-----</u>	<u>Ethylbenzene</u>	<u>340</u>	
<u>108-88-3-----</u>	<u>Toluene</u>	<u>10</u>	<u>U</u>
<u>1330-20-7-----</u>	<u>Xylene (total)</u>		<u>E</u>

SJM 2/12/93 12/88 Rev.

0021

9306L018-003

SAMPLE NO. : 06309343

TEST NO. :

METHOD NO. : 43B / 43B

. 11

INSTRUMENT: 43

DATE TIME: 06/30/93 23:48:37

PAGE NO. : 01

100. 00

90. 00

80. 00

70. 00

60. 00

50. 00

40. 00

30. 00

20. 00

10. 00

0. 00

7. 90

10. 44

13. 23

18. 19

23. 88

28. 07

30. 86

33. 07

34. 26

40. 62

42. 31

0.00 4.50 9.00 13.50 18.00 22.50 27.00 31.50 36.00 40.50 45.00

RETENTION TIME (MINUTES)

Y MAXIMUM: 66675.

Y MINIMUM: 49955.

START TIME: 0. 00

END TIME: 45. 00

On 22

Roy F. Weston, Inc. - Lionville Laboratory

07/01/93 00:33:58

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 06309343 .11

INST:43 VIAL:F0 SEQ NUMBER:011

TEST : 0602X

DATE-TIME INJECTED : 06/30/93 23:48:37

COLLECTION TIME : 44.92

DATE-TIME PROCESSED : 07/01/93 00:33:58

METHOD: 43B / 43B

REV #: 00004 ANALYST: HOCKERM SAMP RATE: 0.78

CLIENT ID: MW-22

SAMPLE VOL: 5.0 ML

CLIENT: LE CARPENTER

COLUMN TYPE: 1%SP1000, PID

LAB ID: 9306L018-003

RAW FILE: RAW1:FU344646

SAMPLE WT :

% MOISTURE :

DILUTION FACTOR : 10.0000

,5ml Sample → 5m

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR COMPONENT #	NAME	HEIGHT	CONC PPB
001	16410	707		7.901				
002	19290	227	V	10.440				
003	4237	283		11.990	1	TRANS-1,2-DICHLOROET		
				13.234				
				14.380	1	MTBE		
				17.101	1	CIS-1,3-DCPE		
004	7219	472		18.190	1	BENZENE	0.727	LL
005	347213	29503		23.881	1	aaa-TRIFLUOROTOLUENE	157.548	/10 = 15.75
				24.677	1	TOLUENE		
006	1915777	113764		28.072	1	ETHYLBENZENE	336.743	
007	73702	2672	V	30.858				
008	4235867	162355	T	33.072	1	M - XYLENE	639.677	out of range
009	2913217	95379		34.265	1	O - XYLENE	469.264	
				39.770	1	1,2-DICHLOROBENZENE		
011	26893	466	T	40.618				
012	23078	368		42.309				

Xylenes (TOTAL) - 1109

A/W
7/6/93

0023

CLIENT SAMPLE NO.

GC VOLATILES SHEET

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

MW-22DL

Client: LE CARPENTERMatrix: WATERLab Sample ID: 9306L018-003 DLSample wt/vol: 5.00 (g/mL) MLLab File ID: FU344624Level: (low/med) LOWDate Received: 06/25/93

% Moisture: not dec.

Date Analyzed: 06/30/93Column: (pack/cap) PACKDilution Factor: 100

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

71-43-2-----	Benzene	NA	
100-41-4-----	Ethylbenzene	NA	
108-88-3-----	Toluene	NA	
1330-20-7-----	Xylene (total)	1000	

Buy 7/12/93

12/88 Rev.

0024

9306L018-003

11/11
15/15

SAMPLE NO. : 06309343

.10

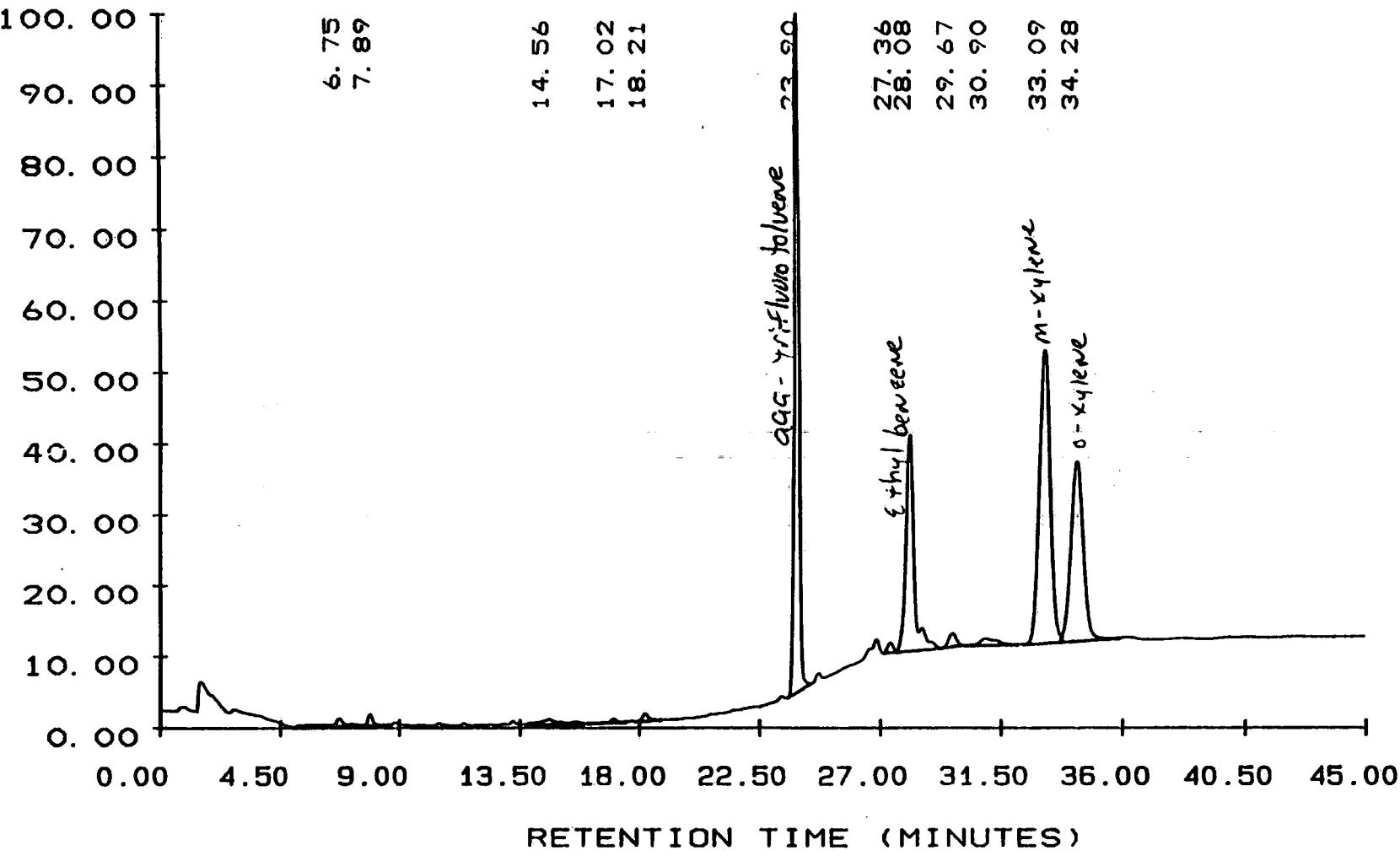
INSTRUMENT: 43

TEST NO. :

DATE TIME: 06/30/93 22:50:53

METHOD NO. : 43B / 43B

PAGE NO. : 01



Y MAXIMUM: 53506.

START TIME: 0.00

Y MINIMUM: 49990.

END TIME: 45.00

0025

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 06309343 .10

TEST : 0602X

COLLECTION TIME : 44.92

METHOD: 43B / 43B

REV #: 00004

ANALYST: HOCKERM SAMP RATE: 0.78

CLIENT ID: MW-22

CLIENT: LE CARPENTER

LAB ID: 9306L018-003

SAMPLE WT :

% MOISTURE :

INST:43 VIAL:FO SEQ NUMBER:010

DATE-TIME INJECTED : 06/30/93 22:50:53

DATE-TIME PROCESSED : 06/30/93 23:36:27

SAMPLE VOL: 5.0 ML

COLUMN TYPE: 1%SP1000, PID

RAW FILE: RAW1:FU344624

DILUTION FACTOR :100.0000

50 μ l Sample \rightarrow 5 ml

(D1)

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	16832	385	T	6.746			
002	7898	538		7.886			
003	12813	243	V	14.562	1	TRANS-1,2-DICHLOROET	9.103 *
004	3072	191	V	17.024	1	CIS-1,3-DCPE	14.129 *
005	5901	356		18.210	1	BENZENE	5.480
006	387021	33117		23.896	1	aaa-TRIFLUOROTOLUENE	1768.425 /100 = 17.68 Buy 7/12/93
				24.677	1	TOLUENE	
007	6912	475	T	27.358			
008	217088	10688	V	28.084	1	ETHYLBENZENE	316.364
009	12403	650		29.674			
010	13939	319	V	30.903			
011	394458	14477	T	33.088	1	M - XYLENE	570.384
012	281664	8880		34.283	1	O - XYLENE	436.877
				39.770	1	1,2-DICHLOROBENZENE	1067

* - NOT A TARGET COMPOUND

Sample Calculation

Ethyl benzene

$$\frac{\text{Peak Height}}{\text{Cal. fact.}} \times \frac{\text{dilution factor}}{\text{fact.}} = \text{PPb}$$

$$\downarrow$$

$$10688 \div 3375.5 \times 100 = 316$$

$$7/6/93$$

0026

CLIENT SAMPLE NO.

GC VOLATILES SHEET

MW-25

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001Client: LE CARPENTERMatrix: WATER Lab Sample ID: 9306L018-004Sample wt/vol: 5.00 (g/mL) ML Lab File ID: G1344682Level: (low/med) LOW Date Received: 06/25/93% Moisture: not dec. Date Analyzed: 07/01/93Column: (pack/cap) PACK Dilution Factor: 1.00

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

71-43-2-----	Benzene	1.0	U
100-41-4-----	Ethylbenzene	1.0	U
108-88-3-----	Toluene	1.0	U
1330-20-7-----	Xylene (total)	2.0	U

by 7/12/93

12/88 Rev.

Dn27

9306L018-004

6/1/93
AM

SAMPLE NO. : 06309343

.13

INSTRUMENT: 43

TEST NO. :

DATE TIME: 07/01/93 01:44:10

METHOD NO. : 43B / 43B

PAGE NO. : 01

100. 00

7. 21

13. 24

18. 19

20. 92

22. 80

23. 89

24. 76

25. 86

28. 55

31. 27

33. 11

34. 25

39. 92

90. 00

80. 00

70. 00

60. 00

50. 00

40. 00

30. 00

20. 00

10. 00

Y MAXIMUM:

53354.

START TIME:

0. 00

Y MINIMUM:

49948.

END TIME:

45. 00

0. 00

4. 50

9. 00

13. 50

18. 00

22. 50

27. 00

31. 50

36. 00

40. 50

45. 00

RETENTION TIME (MINUTES)



Roy F. Weston, Inc. - Lionville Laboratory

07/01/93 02:29:31

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 06309343 .13 INST:43 VIAL:F0 SEQ NUMBER:013
 TEST : 0602X DATE-TIME INJECTED : 07/01/93 01:44:10
 COLLECTION TIME : 44.92 DATE-TIME PROCESSED : 07/01/93 02:29:31
 METHOD: 43B / 43B REV #: 00004 ANALYST: HOCKERM SAMP RATE: 0.78
 CLIENT ID: MW-25 SAMPLE VOL: 5.0 ML
 CLIENT: LE CARPENTER COLUMN TYPE: 1%SP1000, PID
 LAB ID: 9306L018-004 RAW FILE: RAW1:G1344682
 SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	29478	1061	T	7.212			
002	33293	1249		7.906			
003	4544	330		11.990	1	TRANS-1,2-DICHLOROET	
				13.241			
				14.380	1	MTBE	
				17.101	1	CIS-1,3-DCPE	
004	8371	472	V	18.189	1	BENZENE	0.073 u
005	23974	1255	V	20.922			
006	5760	405	V	22.797			
007	369165	31530	V	23.887	1	aaa-TRIFLUOROTOLUENE	16.837
008	17344	1197		24.759	1	TOLUENE	0.208 u
009	19162	855		25.862			
010	19533	281		28.547	1	ETHYLBENZENE	0.083 u
011	9843	281	V	31.275			
012	9075	312	V	33.109	1	M - XYLENE	0.123 TOTAL, 213 > u
013	5402	182		34.249	1	O - XYLENE	0.090
014	9229	129		39.920	1	1,2-DICHLOROBENZENE	0.115 NOT A TARGET

MM
7/6/93

0029

GC VOLATILES SHEET

TBHK

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001Client: LE CARPENTERMatrix: WATER Lab Sample ID: 9306L018-005Sample wt/vol: 5.00 (g/mL) ML Lab File ID: G1344700Level: (low/med) LOW Date Received: 06/25/93% Moisture: not dec. Date Analyzed: 07/01/93Column: (pack/cap) PACK Dilution Factor: 1.00

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L

71-43-2-----	Benzene	1.0	U
100-41-4-----	Ethylbenzene	1.0	U
108-88-3-----	Toluene	1.0	U
1330-20-7-----	Xylene (total)	2.0	U

6/11/93 12/88 Rev.

0030

9306L018-005

11/11/93

0031

SAMPLE NO. : 06309343

. 14

INSTRUMENT: 43

TEST NO. :

DATE TIME: 07/01/93 02:42:01

METHOD NO. : 43B / 43B

PAGE NO. : 01

100. 00

7. 90

12. 38
13. 24

18. 17

23. 88
24. 68

28. 00
31. 28
33. 10
34. 26

90. 00

80. 00

70. 00

60. 00

50. 00

40. 00

30. 00

20. 00

10. 00

0. 00

Cyclo-Triphenoxyether

0.00 4.50 9.00 13.50 18.00 22.50 27.00 31.50 36.00 40.50 45.00

RETENTION TIME (MINUTES)

Y MAXIMUM: 53333.

START TIME: 0. 00

Y MINIMUM: 49950.

END TIME: 45. 00

Roy F. Weston, Inc. - Lionville Laboratory

07/01/93 03:27:21

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 06309343 .14

INST:43 VIAL:F0 SEQ NUMBER:014

TEST : 0602X

DATE-TIME INJECTED : 07/01/93 02:42:01

COLLECTION TIME : 44.92

DATE-TIME PROCESSED : 07/01/93 03:27:21

METHOD: 43B / 43B

REV #: 00004 ANALYST: HOCKERM SAMP RATE: 0.78

CLIENT ID: TBLK

SAMPLE VOL: 5.0 ML

CLIENT: LE CARPENTER

COLUMN TYPE: 1%SP1000, PID

LAB ID: 9306L018-005

RAW FILE: RAW1:G1344700

SAMPLE WT :

% MOISTURE :

DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	68224	1927		7.905			
				11.990	1	TRANS-1,2-DICHLOROET	
002	4403	434	V	12.384			
003	8486	654		13.240			
				14.380	1	MTBE	
004	8307	413		17.101	1	CIS-1,3-DCPE	
005	366413	31374	T	18.174	1	BENZENE	0.064 u
006	20954	1695		23.879	1	aaa-TRIFLUOROTOLUENE	16.754
				24.678	1	TOLUENE	0.295 u
007	6182	194	T	28.072	1	ETHYLBENZENE	
008	7053	230	T	31.281			0.091 TOTAL > , 185 → u
009	11674	191		33.096	1	M - XYLENE	0.094
				34.262	1	O - XYLENE	
				39.770	1	1,2-DICHLOROBENZENE	

mu
7/6/93

0032

WESTEN

STANDARD DATA

0000

INITIAL CALIBRATION for 8010/8020 GC-HALL ALS #1
 LAB: WESTON INSTR ID: ALS #1
 CLIENT: NA GC COL. : SP1000 1%
 16020629

DATE OF ANAL: MIX B - 06/29/93

COMPOUND	RET. TIME	HGHT 1PPB	HGHT 8PPB	HGHT 20PPB	HGHT 40PPB	HGHT 60PPB	CF	%RSD	LIMS FACT.
<hr/>									
MIX B PID COMPOUNDS									
(T12DCE)	11.990	4635	39890	98421	162750	367378	4946.80	15	0.000202
MTBE	14.380	2746	19757	53865	96693	181643	2670.72	9	0.000374
(C13DCP)	17.101	1888	16412	41437	94562	155625	1354.22	13	0.000738
* BENZENE	18.180	6159	49834	119572	265389	436683	6455.93	8	0.000154
* TOLUENE	24.677	6031	43013	104073	230235	372646	5715.58	7	0.000174
* ETHBNZ	28.072	3477	25555	63858	135014	218273	3375.50	6	0.000296
* M-XYL	33.054	2778	18902	47954	99792	157848	2532.81	7	0.000394
* P-XYL	34.157	2255	15137	38320	80370	125019	2031.21	7	0.000492
1,2-DCB	39.770	1220	8149	20849	45729	70595	1120.18	8	0.000892
* aaa-TFT(surr)	23.886	*****	15306	36286	75489	*****	1871.59	3	0.000534
<hr/>									

COMPOUND	C. FT. 1PPB	C. FT. 8PPB	C. FT. 20PPB	C. FT. 40PPB	C. FT. 60PPB	CAL FCT
(T12DCE)	4635.00	4986.25	4921.05	4068.75	6122.97	4946.80
MTBE	2746.00	2469.63	2693.25	2417.33	3027.38	2670.72
(C13DCP)	1165.43	1266.36	1278.92	1459.29	1601.08	1354.22
BENZENE	6159.00	6229.25	5978.60	6634.73	7278.05	6455.93
TOLUENE	6031.00	5376.63	5203.65	5755.88	6210.77	5715.58
ETHBNZ	3477.00	3194.38	3192.90	3375.35	3637.88	3375.50
M-XYL	2778.00	2362.75	2397.70	2494.80	2630.80	2532.81
P-XYL	2255.00	1892.13	1916.00	2009.25	2083.65	2031.21
1,2-DCB	1220.00	1018.63	1042.45	1143.23	1176.58	1120.18
aaa-TFT	1913.25	1814.30	1887.23			1871.59
<hr/>						

* BTEX target compounds by
 Methods 602/8020
 by 7/12/93

by 7/12/93

0034

SAMPLE NO. : 06299343

TEST NO. :

METHOD NO. : 43 / 43B

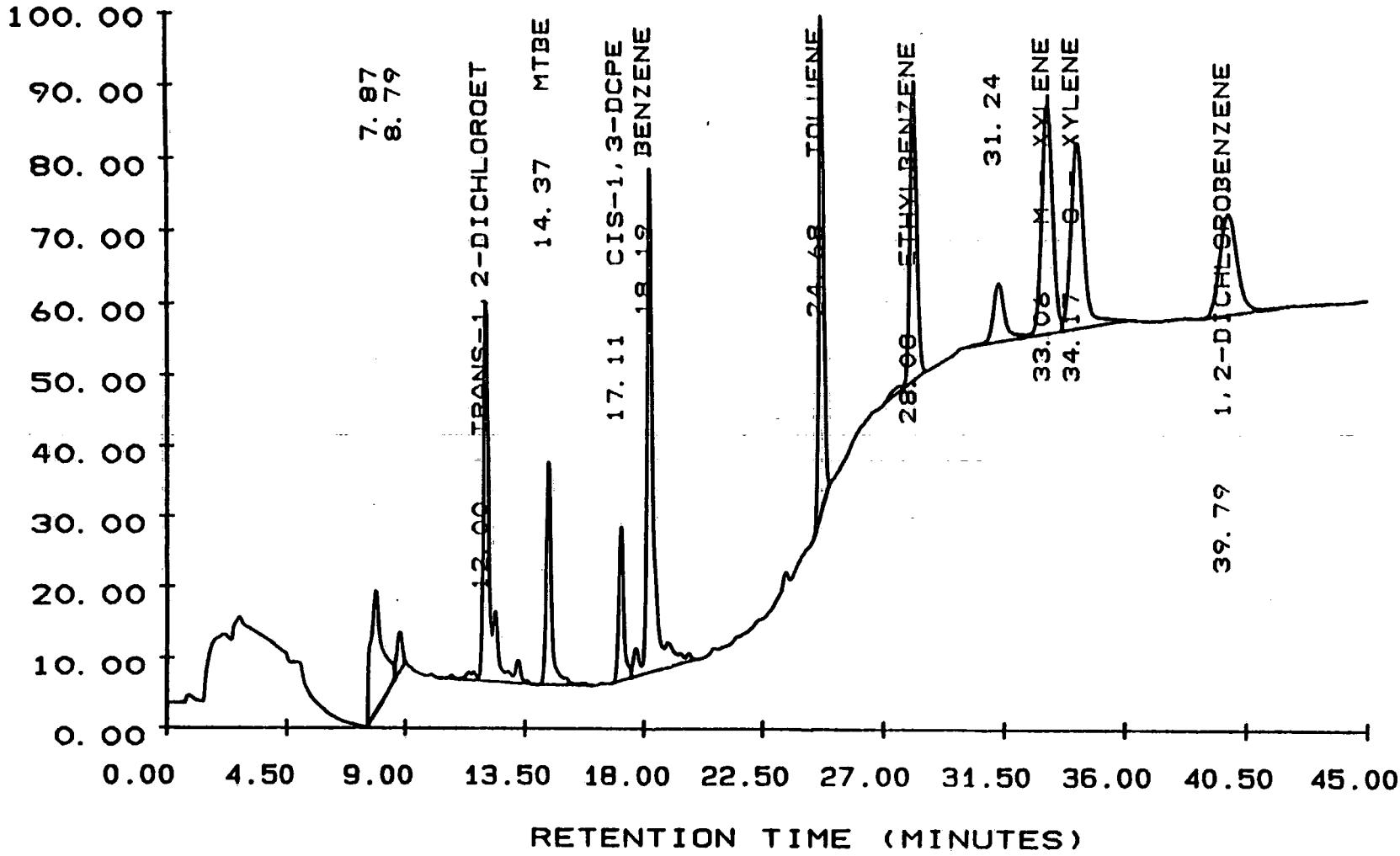
STD B 1 PPB

.02

INSTRUMENT: 43

DATE TIME: 06/29/93 11:54:53

PAGE NO. : 01



Roy F. Weston, Inc. - Lionville Laboratory

06/30/93 10:12:17

EXTERNAL STANDARD

SAMPLE: 06299343 .02 INST:43 VIAL:F0 SEQ NUMBER:002
 TEST : DATE-TIME INJECTED : 06/29/93 11:54:53
 COLLECTION TIME : 44.92 DATE-TIME PROCESSED : 06/30/93 10:12:17
 METHOD: 43 / 43B REV #: 00004 ANALYST: HOCKERM SAMP RATE: 0.78
 CLIENT ID: SAMPLE VOL: 5.0 ML
 CLIENT: COLUMN TYPE: 1%SP1000
 LAB ID: STD B 1 PPB RAW FILE: RAW1:FT343849
 SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
 COLUMN ID: PID

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT	CONC
								PPB
001	44634	1491	T	7.867				
002	6946	485		8.786				
003	79104	4635	V	12.004	1	TRANS-1,2-DICHLOROET	0.936	
004	37427	2746		14.374	1	MTBE	1.027	
005	24499	1888	T	17.114	1	CIS-1,3-DCPE	1.394	
006	103667	6159		18.186	1	BENZENE	0.948	
				23.886	1	aaa-TRIFLUOROTOLUENE		
007	72640	6031		24.681	1	TOLUENE	1.049	
008	62323	3477		28.077	1	ETHYLBENZENE	1.029	
009	21248	709	T	31.245				
010	78029	2778	T	33.062	1	M - XYLENE	1.095	
011	74829	2255		34.168	1	O - XYLENE	1.109	
012	54682	1220		39.787	1	1,2-DICHLOROBENZENE	1.089	

0036

SAMPLE NO. : 06299343

TEST NO. :

METHOD NO. : 43 / 43B

100. 00

90. 00

80. 00

70. 00

60. 00

50. 00

40. 00

30. 00

20. 00

10. 00

0. 00

STD B 8 PPB

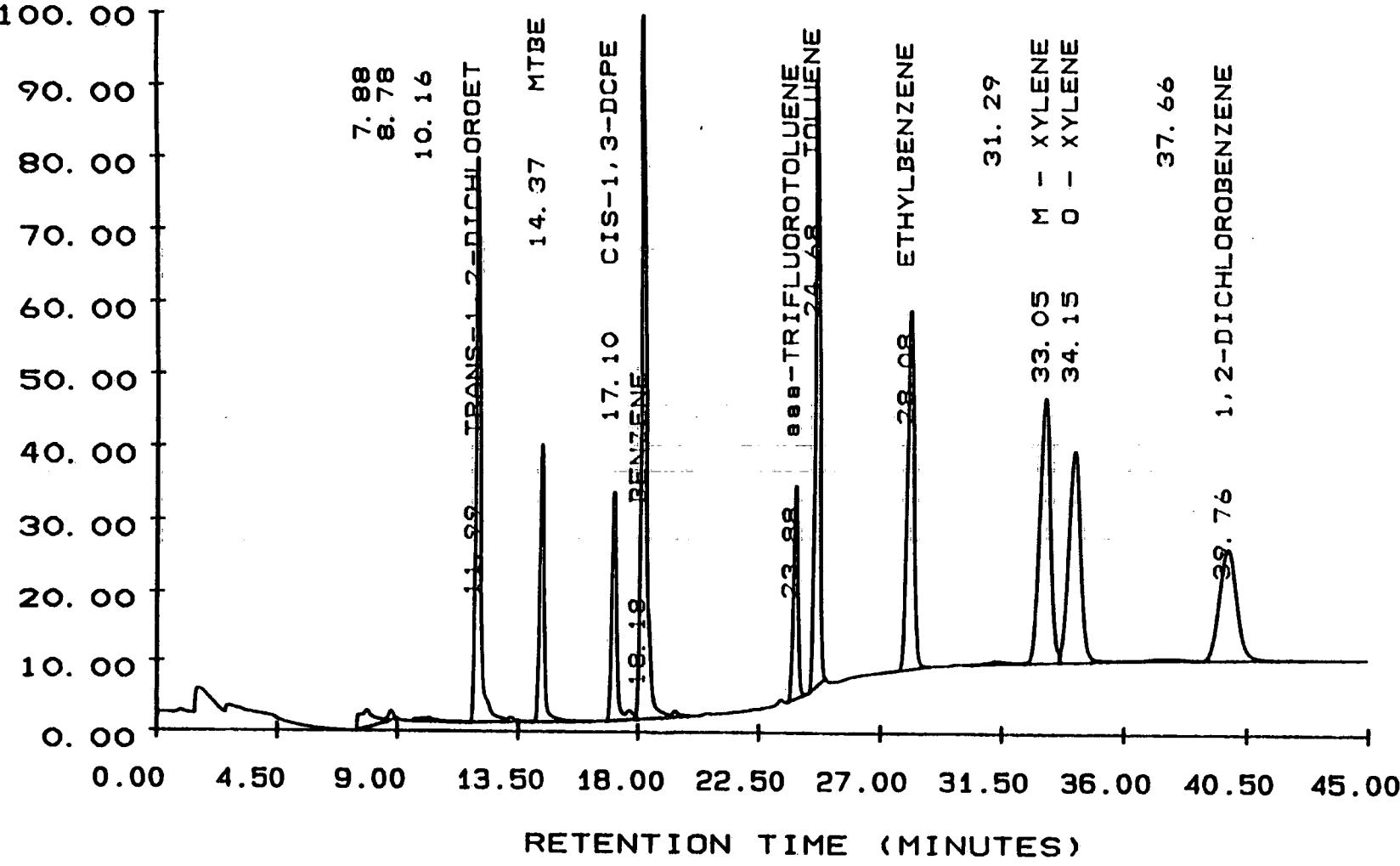
.03

INSTRUMENT: 43

DATE TIME: 06/29/93 12:52:14

PAGE NO.: 01

0097



RETENTION TIME (MINUTES)

Y MAXIMUM: 55061.

Y MINIMUM: 49941.

START TIME: 0. 00

END TIME: 45. 00

Roy F. Weston, Inc. - Lionville Laboratory

06/30/93 10:12:34

EXTERNAL STANDARD

SAMPLE: 06299343 .03
 TEST :
 COLLECTION TIME : 44.92
 METHOD: 43 / 43B REV #: 00004
 CLIENT ID:
 CLIENT:
 LAB ID: STD B 8 PPB
 SAMPLE WT : % MOISTURE :
 COLUMN ID: PID

INST:43 VIAL:F0 SEQ NUMBER:003
 DATE-TIME INJECTED : 06/29/93 12:52:14
 DATE-TIME PROCESSED : 06/30/93 10:12:34
 ANALYST: HOCKERM SAMP RATE: 0.78
 SAMPLE VOL: 5.0 ML
 COLUMN TYPE: 1%SP1000
 RAW FILE: RAW1:FT343869
 DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC	PPB
001	46886	1250	T 7.878				
002	10112	711					
003	13440	295	V 10.158				
004	496384	39890	T 11.992	1	TRANS-1,2-DICHLOROET	8.058	
005	233600	19757	14.372	1	MTBE	7.389	
006	201933	16412	T 17.101	1	CIS-1,3-DCPE	12.112	
007	653350	49834	V 18.181	1	BENZENE	7.674	
008	180058	15306	V 23.882	1	aaa-TRIFLUOROTOLUENE	8.174	
009	502899	43013	24.678	1	TOLUENE	7.484	
010	436646	25555	28.076	1	ETHYLBENZENE	7.564	
011	13504	275	T 31.294				
012	513843	18902	T 33.055	1	M - XYLENE	7.447	
013	460890	15137	34.153	1	O - XYLENE	7.448	
014	16333	206	T 37.656				
015	361997	8149	39.765	1	1,2-DICHLOROBENZENE	7.269	

0028

STD B 20 PPB

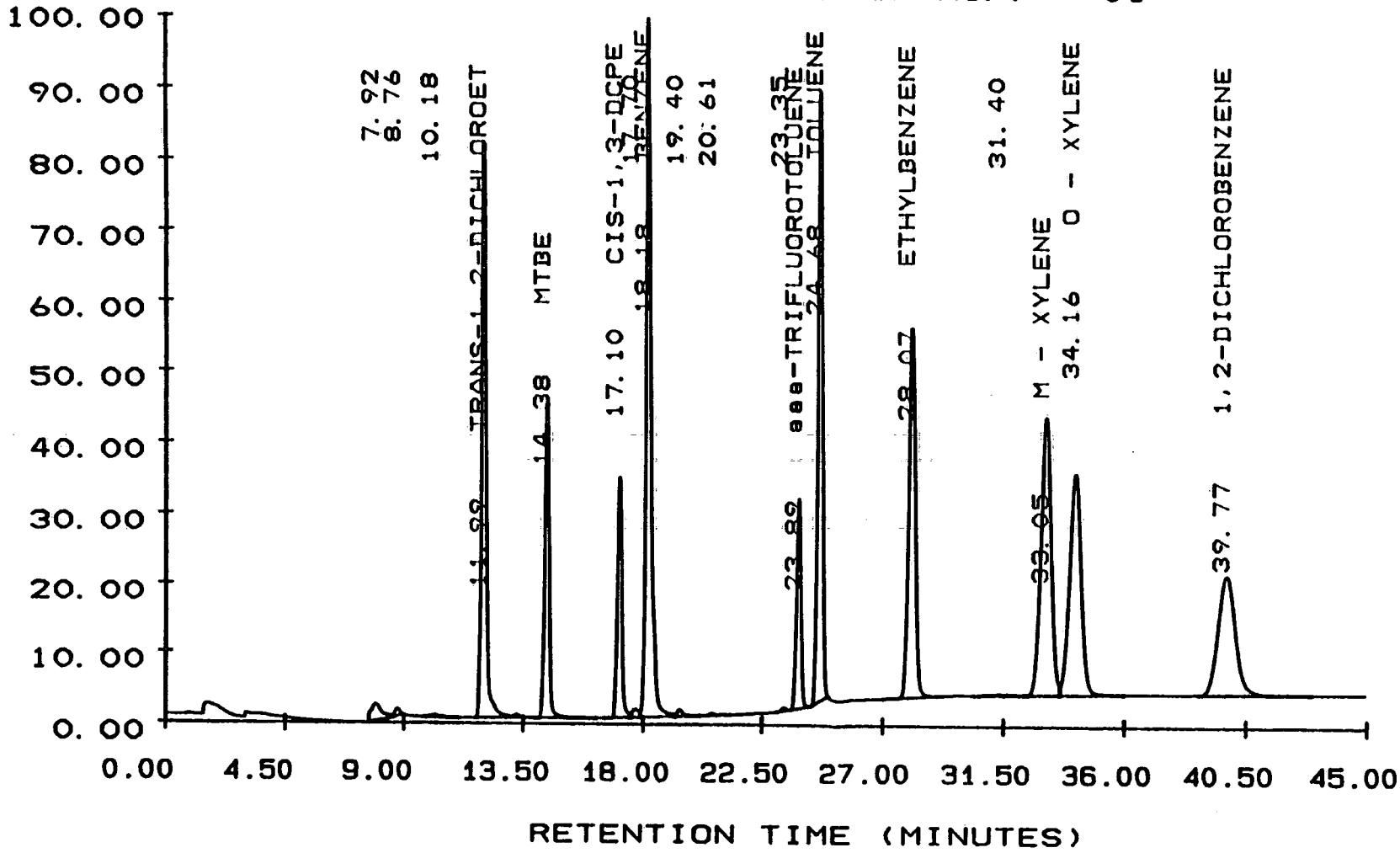
SAMPLE NO. : 06299343
TEST NO. :
METHOD NO. : 43 / 43B

.04

INSTRUMENT: 43

DATE TIME: 06/29/93 13:49:39

PAGE NO. : 01



Y MAXIMUM: 62112.
Y MINIMUM: 49932.

START TIME: 0.00
END TIME: 45.00

Roy F. Weston, Inc. - Lionville Laboratory

06/30/93 10:12:48

EXTERNAL STANDARD

SAMPLE: 06299343 .04 INST:43 VIAL:F0 SEQ NUMBER:004
TEST : DATE-TIME INJECTED : 06/29/93 13:49:39
COLLECTION TIME : 44.92 DATE-TIME PROCESSED : 06/30/93 10:12:48
METHOD: 43 / 43B REV #: 00004 ANALYST: HOCKERM SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000
LAB ID: STD B 20 PPB RAW FILE: RAW1:FT343884
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
COLUMN ID: PID

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT	CONC	PPB
001	78810	2876	T	7.922					
002	18381	1298		8.764					
003	10918	493	V	10.183					
004	1171163	98421	T	11.990	1	TRANS-1,2-DICHLOROET	19.881		
005	608666	53865	V	14.380	1	MTBE	20.145		
006	468403	41437	T	17.101	1	CIS-1,3-DCPE	30.581		
007	24304	1417	T	17.702					
008	1545843	119572	T	18.180	1	BENZENE	18.414		
009	19981	1129	V	19.398					
010	7552	381	V	20.610					
011	7936	630	V	23.350					
012	420992	36286	V	23.886	1	aaa-TRIFLUOROTOLUENE	19.377		
013	1216871	104073		24.677	1	TOLUENE	18.109		
014	1083201	63858		28.072	1	ETHYLBENZENE	18.902		
015	19853	309	T	31.402					
016	1265203	47954	T	33.054	1	M - XYLENE	18.894		
017	1128755	38320		34.157	1	O - XYLENE	18.853		
018	912525	20849		39.770	1	1,2-DICHLOROBENZENE	18.597		

0040

STD B 40 PPB

SAMPLE NO. : 06299343

.05

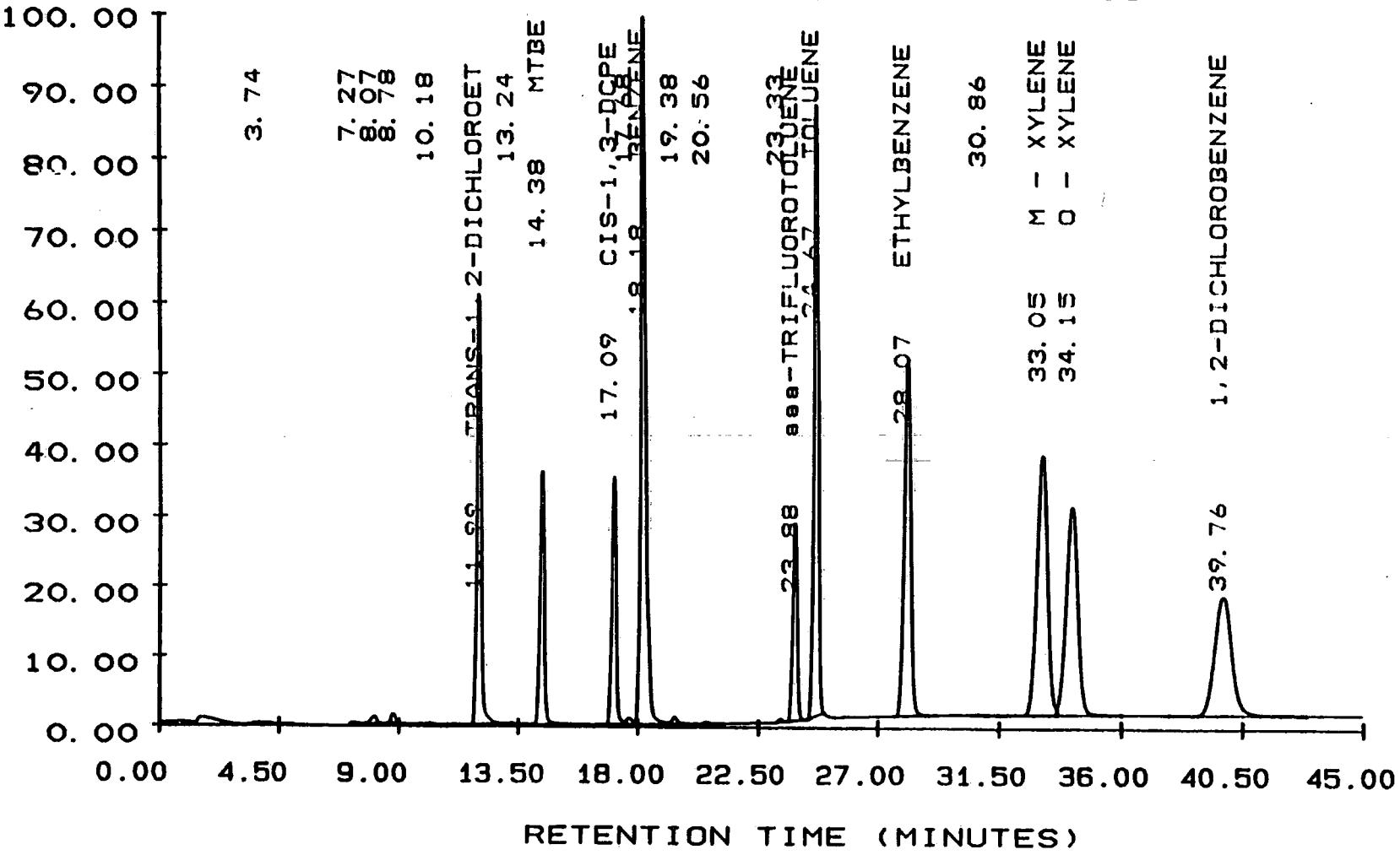
INSTRUMENT: 43

TEST NO. :

DATE TIME: 06/29/93 14:47:04

METHOD NO. : 43 / 43B

PAGE NO. : 01



Roy F. Weston, Inc. - Lionville Laboratory

06/30/93 10:13:00

EXTERNAL STANDARD

SAMPLE: 06299343 .05 INST:43 VIAL:F0 SEQ NUMBER:005
 TEST : DATE-TIME INJECTED : 06/29/93 14:47:04
 COLLECTION TIME : 44.92 DATE-TIME PROCESSED : 06/30/93 10:13:00
 METHOD: 43 / 43B REV #: 00004 ANALYST: HOCKERM SAMP RATE: 0.78
 CLIENT ID: SAMPLE VOL: 5.0 ML
 CLIENT: COLUMN TYPE: 1%SP1000
 LAB ID: STD B 40 PPB RAW FILE: RAW1:FT343902
 SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
 COLUMN ID: PID

PK NO	PEAK AREA	PEAK HEIGHT	BL RT MINUTES	GR #	COMPONENT NAME	HEIGHT	CONC
							PPB
001	44928	841		3.742			
002	33933	1283	T	7.268			
003	56678	3154	V	8.069			
004	39245	3480		8.777			
005	14848	703	V	10.183			
006	1823027	162750	T	11.987	1 TRANS-1,2-DICHLOROET	32.875	
007	17024	871	T	13.239			
008	1093863	96693	V	14.379	1 MTBE	36.163	
009	1041024	94562	T	17.092	1 CIS-1,3-DCPE	69.787	
010	39546	2497	T	17.679			
011	3308903	265389	T	18.176	1 BENZENE	40.870	
012	43904	2719	T	19.376			
013	16294	836	V	20.556			
014	16589	1389	V	23.327			
015	878016	75489	V	23.878	1 aaa-TRIFLUOROTOLUENE	40.311	
016	2613159	230235		24.671	1 TOLUENE	40.061	
017	2255629	135014		28.066	1 ETHYLBENZENE	39.964	
018	23309	511	V	30.864			
019	2644647	99792	T	33.046	1 M - XYLENE	39.318	
020	2367041	80370		34.145	1 O - XYLENE	39.542	
021	1970689	45729		39.758	1 1,2-DICHLOROBENZENE	40.791	

0049

STD B 60 PPB

SAMPLE NO. : 06299343

TEST NO. :

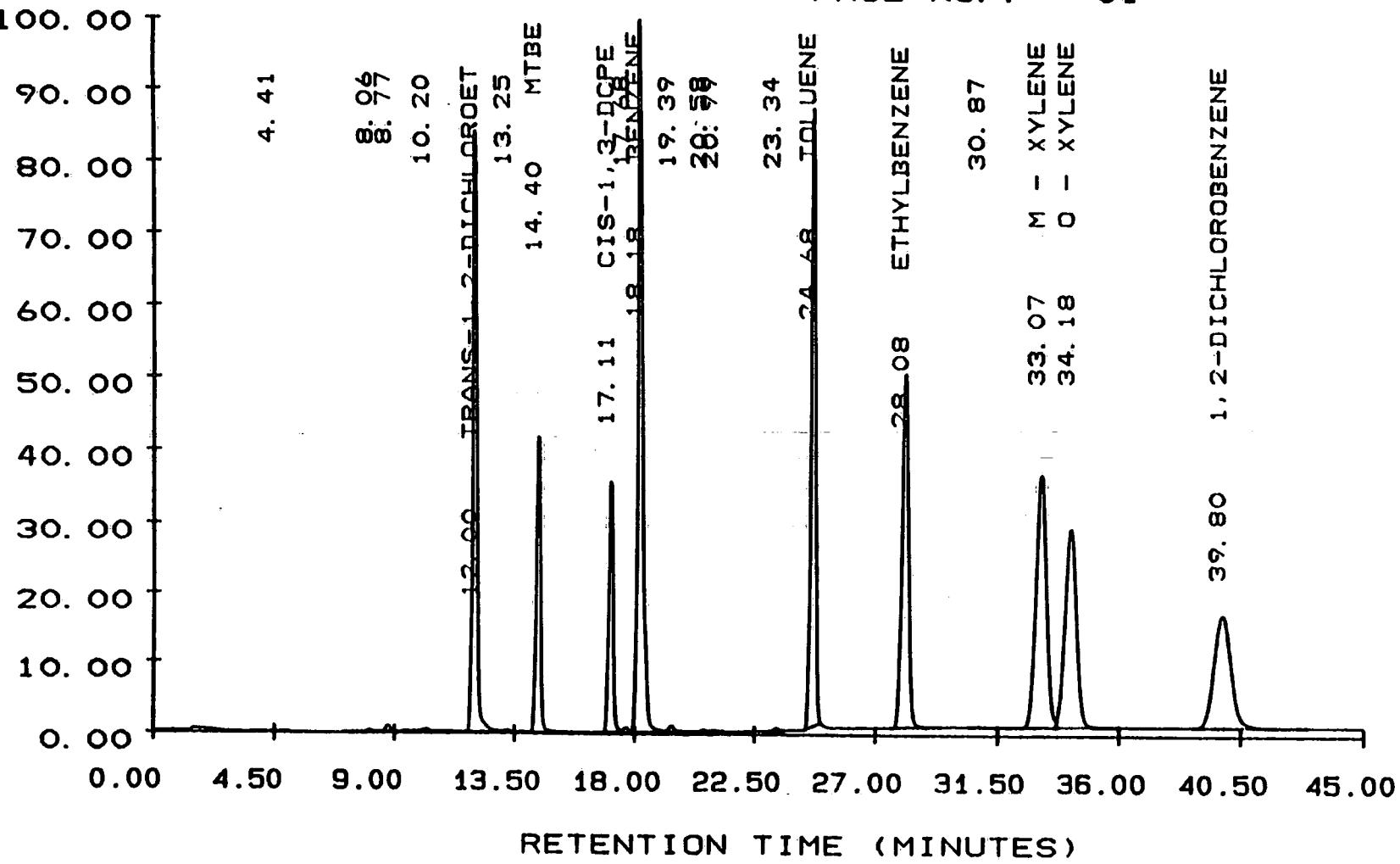
METHOD NO. : 43 / 43B

.06

INSTRUMENT: 43

DATE TIME: 06/29/93 15:44:54

PAGE NO. : 01



06299343

Roy F. Weston, Inc. - Lionville Laboratory

06/30/93 10:13:12

EXTERNAL STANDARD

SAMPLE: 06299343 .06 INST:43 VIAL:FO SEQ NUMBER:006
 TEST : DATE-TIME INJECTED : 06/29/93 15:44:54
 COLLECTION TIME : 44.92 DATE-TIME PROCESSED : 06/30/93 10:13:12
 METHOD: 43 / 43B REV #: 00004 ANALYST: HOCKERM SAMP RATE: 0.78
 CLIENT ID: SAMPLE VOL: 5.0 ML
 CLIENT: COLUMN TYPE: 1%SP1000
 LAB ID: STD B 60 PPB RAW FILE: RAW1:FT343924
 SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000
 COLUMN ID: PID

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC	PPB
001	11674	295		4.412				
002	40858	1553	V	8.063				
003	43072	3704		8.765				
004	38938	1838	V	10.199				
005	3979009	367378	T	11.997	1	TRANS-1,2-DICHLOROET	74.210	
006	29504	1602	T	13.254				
007	2017575	181643	V	14.397	1	MTBE	67.934	
008	1695655	155625	T	17.106	1	CIS-1,3-DCPE	114.851	
009	45468	2884	T	17.685				
010	5326619	436683	T	18.185	1	BENZENE	67.249	
011	63616	3988	T	19.386				
012	21312	1345	T	20.579				
013	14541	1140	V	20.990				
014	23552	1892	V	23.340				
015	4209549	372646		23.886	1	aaa-TRIFLUOROTOLUENE		
016	3574363	218273		24.684	1	TOLUENE	64.840	
017	24410	773	V	28.083	1	ETHYLBENZENE	64.609	
018	4139905	157848	T	30.872				
019	3678631	125019		33.075	1	M - XYLENE	62.192	
020	3054387	70595		34.176	1	O - XYLENE	61.509	
				39.803	1	1,2-DICHLOROBENZENE	62.971	

0046

FORM7GC
GC Volatiles Continuing Calibration

RFW: 9306L018 Instrument Number: 43
 Work Order Number: 06720-013-001-0 Column Used: 1%SP1000, PID
 Client Name: LE CARPENTER Matrix: WATER
 Date of Init. Calibration: 06/29/93 True Concentration: 20 (ppb)

MIX NO.	GC SAMPLE ID	DESCRIPTION	DATE/TIME ANALYZED	
1	06309343.01	STD B 20 PPB	06/30/93 13:48:47	DCV
2	06309343.17	STD B 20 PPB	07/01/93 08:41:58	CCV

COMPOUND NAME	MIX	RT#	RT WINDOW	CON(ppb)	% REC	QC LIMITS(ppb)	QC LIMITS(%)
aaa-Trifluorotoluene	01	23.88	NA	- NA	18.9	94.9	NR
aaa-Trifluorotoluene	02	23.89	NA	- NA	18.9	94.8	NR
Benzene	01	18.16	NA	- NA	17.5	87.5	NR
Benzene	02	18.18	NA	- NA	17.1	85.8	NR
Ethylbenzene	01	28.07	NA	- NA	18.1	90.8	NR
Ethylbenzene	02	28.08	NA	- NA	17.6	88.4	NR
Toluene	01	24.67	NA	- NA	17.4	87.2	NR
Toluene	02	24.68	NA	- NA	16.8	84.2	NR*
Xylene (total)	01		NA	- NA	18.5	92.6	NR
Xylene (total)	02				17.6	87.7	

* - outside QC limits NR - not reported

+ ± 15% vs ICAL by method 8020.
 (Xylenes not listed by method 602).

0045

SAMPLE NO. : 06309343

TEST NO. :

METHOD NO. : 43B / 43B

STD B 20 PPB

.01

INSTRUMENT: 43

DATE TIME: 06/30/93 13:48:47

PAGE NO.: 01

100. 00

90. 00

80. 00

70. 00

60. 00

50. 00

40. 00

30. 00

20. 00

10. 00

0. 00

6. 73
7. 85
8. 81

11. 92 TRANS-1, 2-DICHLOROET

17. 09 CIS-1, 3-DCPE
18. 16 BENZENE

19. 37
20. 98

23. 88 888-TRIFLUOROTOLUENE
24. 67 TOLUENE

28. 08 ETHYLBENZENE

31. 06
34. 18 M - XYLENE
34. 18 O - XYLENE

38. 19
39. 81 1, 2-DICHLOROBENZENE

0.00 4.50 9.00 13.50 18.00 22.50 27.00 31.50 36.00 40.50 45.00

RETENTION TIME (MINUTES)

Y MAXIMUM: 61604.

Y MINIMUM: 50079.

START TIME: 0. 00

END TIME: 45. 00

On 6. 6

Roy F. Weston, Inc. - Lionville Laboratory

06/30/93 14:34:11

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 06309343 .01

INST:43 VIAL:F0 SEQ NUMBER:001

TEST :

DATE-TIME INJECTED : 06/30/93 13:48:47

COLLECTION TIME : 44.92

DATE-TIME PROCESSED : 06/30/93 14:34:11

METHOD: 43B / 43B REV #: 00004

ANALYST: HOCKERM SAMP RATE: 0.78

CLIENT ID:

SAMPLE VOL: 5.0 ML

CLIENT:

COLUMN TYPE: 1%SP1000, PID

LAB ID: STD B 20 PPB

RAW FILE: RAW1:FU344375

SAMPLE WT :

% MOISTURE :

DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	9997	699	V	6.725			
002	6541	539	V	7.845			
003	6054	549		8.812			
004	482752	42245	V	11.994	1	TRANS-1,2-DICHLOROET	8.534
				14.380	1	MTBE	
005	455462	38828	T	17.089	1	CIS-1,3-DCPE	28.655
006	1449665	113661	T	18.164	1	BENZENE	17.504
007	19648	1146	V	19.365			
008	6758	250	V	20.982			
009	6886	564	V	23.311			
010	409830	35550	V	23.880	1	aaa-TRIFLUOROTOLUENE	18.984
011	1165531	100181		24.673	1	TOLUENE	17.432
012	1058523	61332		28.076	1	ETHYLBENZENE	18.154
013	71565	2141	V	31.064			
014	1263707	47147	T	33.074	1	M - XYLENE	18.576
015	1113267	37701		34.184	1	O - XYLENE	18.549
016	7488	198	T	38.189			
017	838016	19021		39.808	1	1,2-DICHLOROBENZENE	16.967

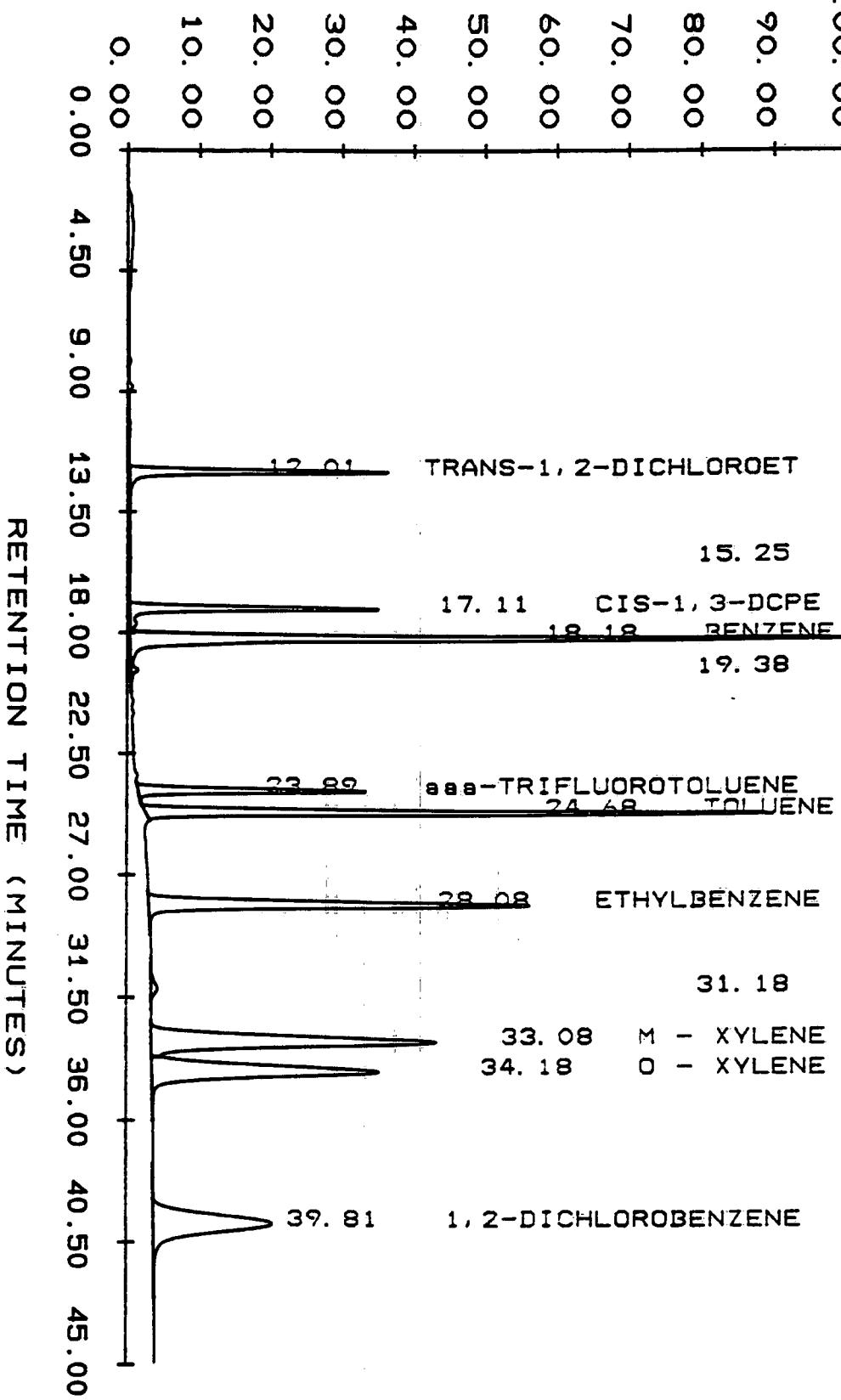
0047

SAMPLE NO. : 06309343
TEST NO. : .17
METHOD NO. : 43B / 43B
100.00

STD B 20 PPP

INSTRUMENT: 43
DATE TIME: 07/01/93 08:41:58

PAGE NO. : 01



Y MAXIMUM: 61371.
Y MINIMUM: 50080.

START TIME: 0.00
END TIME: 45.00

O C R

Roy F. Weston, Inc. - Lionville Laboratory

07/01/93 09:27:23

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 06309343 .17 INST:43 VIAL:FO SEQ NUMBER:017
TEST : DATE-TIME INJECTED : 07/01/93 08:41:58
COLLECTION TIME : 44.92 DATE-TIME PROCESSED : 07/01/93 09:27:23
METHOD: 43B / 43B REV #: 00004 ANALYST: HOCKERM SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: STD B 20 PPB RAW FILE: RAW1:G1344788
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	452941	40174		12.007	1	TRANS-1,2-DICHLOROET	8.115
				14.380	1	MTBE	
002	7693	177	V	15.249			
003	457190	38844	T	17.108	1	CIS-1,3-DCPE	28.667
004	1424499	111478	T	18.185	1	BENZENE	17.168
005	19712	1124	V	19.383			
006	411392	35500	V	23.892	1	aaa-TRIFLUOROTOLUENE	18.957
007	1129371	96767		24.684	1	TOLUENE	16.838
008	1007258	59757		28.083	1	ETHYLBENZENE	17.688
009	32333	1009	V	31.184			
010	1179111	44673	T	33.076	1	M - XYLENE	17.601
011	1041472	35558		34.182	1	O - XYLENE	17.494
012	820736	18632		39.806	1	1,2-DICHLOROBENZENE	16.619

DRAFT

WESTEN

RAW QC DATA

0050

GC VOLATILES SHEET

BLK

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001Client: LE CARPENTERMatrix: WATERLab Sample ID: 93LV4302-MB1Sample wt/vol: 5.00 (g/mL) MLLab File ID: FU344487Level: (low/med) LOWDate Received: 06/30/93

% Moisture: not dec.

Date Analyzed: 06/30/93Column: (pack/cap) PACKDilution Factor: 1.00CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

CAS NO.	COMPOUND		
71-43-2-----	Benzene	1.0	U
100-41-4-----	Ethylbenzene	1.0	U
108-88-3-----	Toluene	1.0	U
1330-20-7-----	Xylene (total)	2.0	U

bmg 7/17/95 12/88 Rev.

0051

93LV4302-MB1

6/30/93
18:02:02

0057

SAMPLE NO. : 06309343

.05

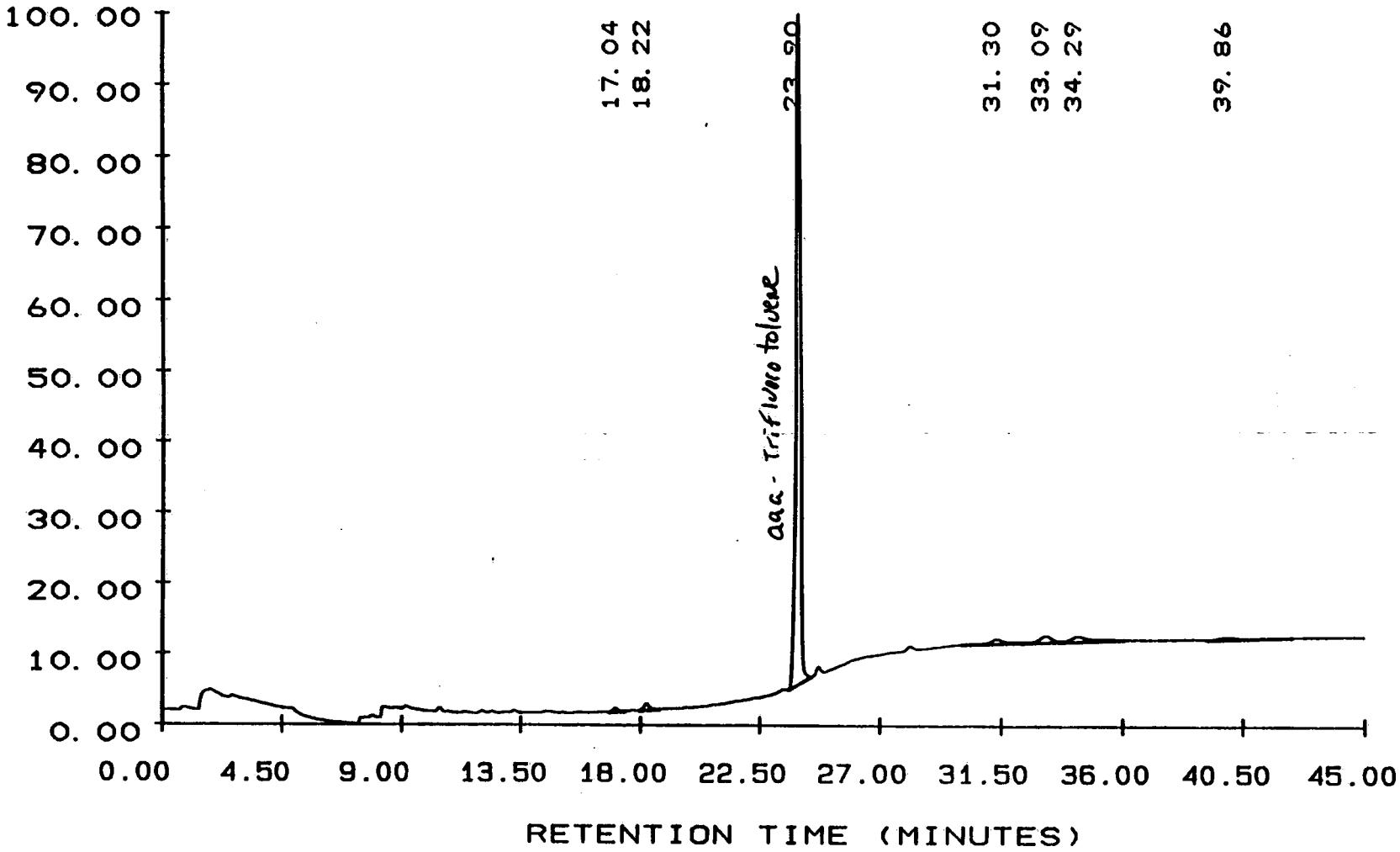
INSTRUMENT: 43

TEST NO. :

DATE TIME: 06/30/93 18:02:02

METHOD NO. : 43B / 43B

PAGE NO. : 01



Y MAXIMUM: 53951.

START TIME: 0.00

Y MINIMUM: 49999.

END TIME: 45.00

Roy F. Weston, Inc. - Lionville Laboratory

06/30/93 18:47:24

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 06309343 .05 INST:43 VIAL:FO SEQ NUMBER:005
TEST : DATE-TIME INJECTED : 06/30/93 18:02:02
COLLECTION TIME : 44.92 DATE-TIME PROCESSED : 06/30/93 18:47:24
METHOD: 43B / 43B REV #: 00004 ANALYST: HOCKERM SAMP RATE: 0.78
CLIENT ID: SAMPLE VOL: 5.0 ML
CLIENT: COLUMN TYPE: 1%SP1000, PID
LAB ID: 93LV4302-MB1 RAW FILE: RAW1:FU344487
SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
				11.990	1	TRANS-1,2-DICHLOROET	
				14.380	1	MTBE	
001	2419	190	V	17.042	1	CIS-1,3-DCPE	0.140 ✓
002	5107	357		18.217	1	BENZENE	0.055 ✓
003	428979	36915		23.902	1	aaa-TRIFLUOROTOLUENE	19.712
				24.677	1	TOLUENE	
				28.072	1	ETHYLBENZENE	
004	10842	253	T	31.298			
005	12352	368	T	33.089	1	M - XYLENE	0.145 ✓
006	15360	285		34.292	1	O - XYLENE	0.140 ✓
007	5568	116		39.861	1	1,2-DICHLOROBENZENE	0.104 not TARGET

inv 11693

0053

CLIENT SAMPLE NO.

GC VOLATILES SHEET

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

BLKMS

Client: LE CARPENTERMatrix: WATER Lab Sample ID: 93LV4302-MB1 BSSample wt/vol: 5.00 (g/mL) ML Lab File ID: FU344438Level: (low/med) LOW Date Received: 06/30/93% Moisture: not dec. Date Analyzed: 06/30/93Column: (pack/cap) PACK Dilution Factor: 1.00

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

<u>CAS NO.</u>	<u>COMPOUND</u>		
71-43-2-----	Benzene		SP
100-41-4-----	Ethylbenzene		SP
108-88-3-----	Toluene		SP
1330-20-7-----	Xylene (total)		SP

SP: SPIKE COMPOUND

BM 7/1/93 12/88 Rev.

0054

93LV4302-MB1S

5/11/93

SAMPLE NO. : 06309343

.03

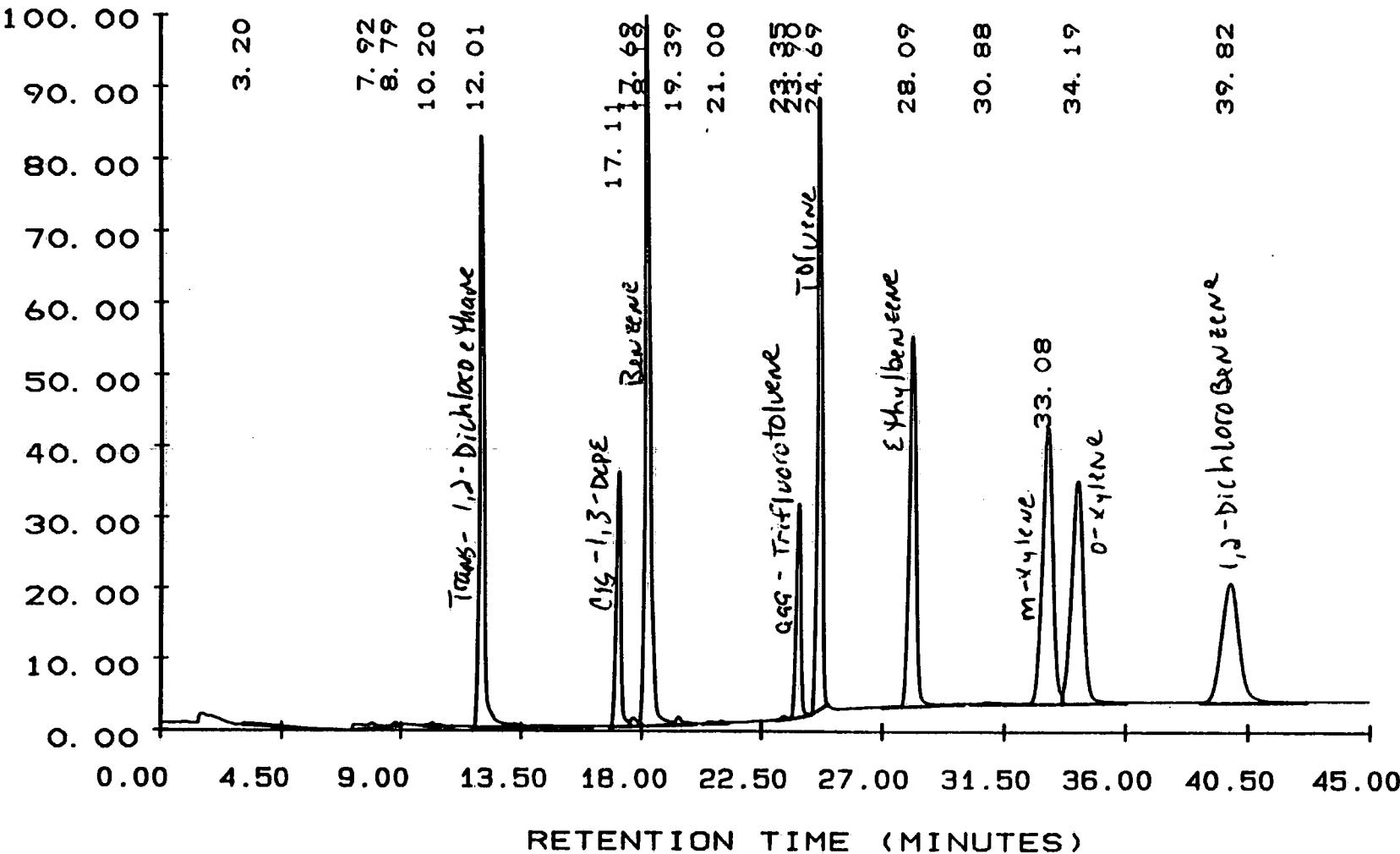
INSTRUMENT: 43

TEST NO. :

DATE TIME: 06/30/93 15:49:09

METHOD NO.: 43B / 43B

PAGE NO.: 01



Y MAXIMUM: 61710.

START TIME: 0.00

Y MINIMUM: 49949.

END TIME: 45.00

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 06309343 .03

TEST :

COLLECTION TIME : 44.92

METHOD: 43B / 43B REV #: 00004

CLIENT ID:

CLIENT:

LAB ID: 93LV4302-MB1MS

SAMPLE WT :

% MOISTURE :

INST:43 VIAL:F0 SEQ NUMBER:003

DATE-TIME INJECTED : 06/30/93 15:49:09

DATE-TIME PROCESSED : 06/30/93 16:34:42

ANALYST: HOCKERM SAMP RATE: 0.78

SAMPLE VOL: 5.0 ML

COLUMN TYPE: 1%SP1000, PID

RAW FILE: RAW1:FU344438

DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT CONC PPB
001	17395	241		3.204			
002	41242	795	T	7.922			
003	7206	608		8.794			
004	8858	452	V	10.198			
005	1139585	96318		12.005	1	TRANS-1,2-DICHLOROET	19.456 *
				14.380	1	MTBE	
006	466342	41570	T	17.112	1	CIS-1,3-DCPE	30.679 *
007	20406	1245	T	17.690			
008	1487245	115615	T	18.192	1	BENZENE	17.805
009	18970	1159	V	19.392			
010	8128	303	V	20.997			
011	5555	435	V	23.349			
012	404736	34818	V	23.896	1	aaa-TRIFLUOROTOLUENE	18.593
013	1162125	99730		24.688	1	TOLUENE	17.353
014	1031936	60827		28.088	1	ETHYLBENZENE	18.005
015	9280	240	V	30.884			
016	1201933	45451	T	33.083	1	M - XYLENE	17.908
017	1077761	36608		34.190	1	O - XYLENE	18.011
018	861939	19673		39.823	1	1,2-DICHLOROBENZENE	17.548 *

* not a target compound *new**New 7/6/93*

0056

CLIENT SAMPLE NO.

GC VOLATILES SHEET

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

MW-4MS

Client: LE CARPENTERMatrix: WATERLab Sample ID: 9306L018-001 MSSample wt/vol: 5.00 (g/mL) MLLab File ID: FU344548Level: (low/med) LOWDate Received: 06/25/93% Moisture: not dec. Date Analyzed: 06/30/93Column: (pack/cap) PACKDilution Factor: 1.00

CONCENTRATION UNITS:

CAS NO. COMPOUND (ug/L or ug/Kg) UG/L

71-43-2-----	Benzene		SP
100-41-4-----	Ethylbenzene		SP
108-88-3-----	Toluene		SP
1330-20-7-----	Xylene (total)		SP

SP: SPIKE COMPOUND

6/11/93 12/88 Rev.

0057

9306L018-001S

SAMPLE NO. : 06309343

.07

INSTRUMENT: 43

TEST NO. :

DATE TIME: 06/30/93 19:57:33

METHOD NO. : 43B / 43B

PAGE NO. : 01

100.00

6.73
7.89

90.00

11.99
14.37

80.00

Trans-1,3-Dichloroethane

70.00

cis-1,3-DPE

60.00

cis-1,3-Vinylene

50.00

Benzene

40.00

17.09
18.17

30.00

19.37

20.00

20.53
22.78
23.67

10.00

25.45
26.41
27.44

0.00

28.45
29.33
30.41

RETENTION TIME (MINUTES)

Y MAXIMUM: 61498.

START TIME: 0.00

Y MINIMUM: 49990.

END TIME: 45.00

b n 5 8

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 06309343 .07
 TEST : 0602X
 COLLECTION TIME : 44.92
 METHOD: 43B / 43B REV #: 00004 ANALYST: HOCKERM SAMP RATE: 0.78
 CLIENT ID: MW-4 SAMPLE VOL: 5.0 ML
 CLIENT: LE CARPENTER COLUMN TYPE: 1%SP1000, PID
 LAB ID: 9306L018-001MS RAW FILE: RAW1:FU344548
 SAMPLE WT : % MOISTURE : DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR #	COMPONENT NAME	HEIGHT	CONC	PPB
001	17434	402	T	6.735					
002	6182	424		7.886					
003	487936	42961	T	11.995	1	TRANS-1,2-DICHLOROET	8.678 X		
004	24883	988	V	14.372	1	MTBE	0.370 X		
005	477235	40945	T	17.092	1	CIS-1,3-DCPE	30.217 *		
006	1458317	113508	T	18.168	1	BENZENE	17.480		
007	19302	1196	V	19.368					
008	35008	1433	T	20.934					
009	4723	395	V	21.531					
010	17037	1047	V	22.784					
011	6541	551	V	23.311					
012	408922	34687	V	23.879	1	aaa-TRIFLUOROTOLUENE	18.523		
013	1188801	100247		24.673	1	TOLUENE	17.443		
014	89498	4815	T	25.645					
015	44864	3242		26.189					
016	60634	2833	T	27.453					
017	1202267	68380	V	28.070	1	ETHYLBENZENE	20.240		
018	99610	4750		29.331					
019	38387	2148	T	30.415					
020	197453	7852	T	30.903					
021	45210	1968	V	31.763					
022	1319707	50040	T	33.070	1	M - XYLENE	19.716		
023	1068147	37299	T	34.179	1	O - XYLENE	18.351		
024	103974	2560		35.609					
025	38080	918	T	38.144					
026	1026573	20138	T	39.821	1	1,2-DICHLOROBENZENE	17.963 *		
027	31923	585		43.052					

* NOT A TARGET compound *mw*

mw 7/6/93

0059

CLIENT SAMPLE NO.

GC VOLATILES SHEET

Lab Name: Roy F. Weston, Inc. Work Order: 06720013001

MW-4MSD

Client: LE CARPENTERMatrix: WATERLab Sample ID: 9306L018-001 MSDSample wt/vol: 5.00 (g/mL) MLLab File ID: FU344575Level: (low/med) LOWDate Received: 06/25/93% Moisture: not dec. Date Analyzed: 06/30/93Column: (pack/cap) PACKDilution Factor: 1.00

CONCENTRATION UNITS:

(ug/L or ug/Kg) UG/L

71-43-2-----	Benzene	SP
100-41-4-----	Ethylbenzene	SP
108-88-3-----	Toluene	SP
1330-20-7-----	Xylene (total)	SP

SP: SPIKE COMPOUND

12/88 Rev.
1/11/93

0060

9306L018-001 T

11/11

SAMPLE NO. : 06309343

.08

INSTRUMENT: 43

TEST NO. :

DATE TIME: 06/30/93 20:55:18

METHOD NO. : 43B / 43B

PAGE NO. : 01

100.00

90.00

80.00

70.00

60.00

50.00

40.00

30.00

20.00

10.00

0.00

Trans-1,2-Dihloroethane

7.91
8.80

10.19

11.99

14.38

Benzene 17.10
18.17

19.37

21.93

22.78

23.67

24.55

25.45

26.33

27.22

28.11

29.00

30.88

31.76

32.64

33.51

34.38

35.21

36.01

37.15

38.02

39.82

40.02

0.00 4.50 9.00 13.50 18.00 22.50 27.00 31.50 36.00 40.50 45.00

RETENTION TIME (MINUTES)

Y MAXIMUM: 61045.

START TIME: 0.00

Y MINIMUM: 49950.

END TIME: 45.00

MULTILEVEL EXTERNAL STANDARD

SAMPLE: 06309343 .08

INST:43 VIAL:F0 SEQ NUMBER:008

TEST : 0602X

DATE-TIME INJECTED : 06/30/93 20:55:18

COLLECTION TIME : 44.92

DATE-TIME PROCESSED : 06/30/93 21:40:40

METHOD: 43B / 43B REV #: 00004 ANALYST: HOCKERM SAMP RATE: 0.78

CLIENT ID: MW-4

SAMPLE VOL: 5.0 ML

CLIENT: LE CARPENTER

COLUMN TYPE: 1%SP1000, PID

LAB ID: 9306L018-001MSD

RAW FILE: RAW1:FL344575

SAMPLE WT :

% MOISTURE :

DILUTION FACTOR : 1.0000

PK NO	PEAK AREA	PEAK HEIGHT	BL	RT MINUTES	GR COMPONENT #	HEIGHT CONC PPB	
						NAME	
001	31334	614	T	7.908			
002	8474	567		8.796			
003	21350	456	V	10.187			
004	1065499	90782	T	11.994	1	TRANS-1,2-DICHLOROET	18.338*
005	22656	1416	V	14.379	1	MTBE	0.530*
006	465229	39750	T	17.096	1	CIS-1,3-DCPE	29.336*
007	1407297	108998	T	18.174	1	BENZENE	16.786
008	18406	1090	V	19.373			
009	34035	1380	T	20.934			
010	4634	383	V	21.532			
011	15782	976	V	22.783			
012	5901	480	V	23.319			
013	393856	33395	V	23.881	1	aaa-TRIFLUOROTOLUENE	17.833
014	1146663	96616		24.674	1	TOLUENE	16.811
015	83328	4474	T	25.646			
016	43814	3080		26.189			
017	56973	2646	T	27.453			
018	1160653	66041	V	28.071	1	ETHYLBENZENE	19.548
019	93158	4443		29.331			
020	36006	2027	T	30.415			
021	185907	7428	T	30.902			
022	42074	1879	V	31.765			
023	1281485	48555	T	33.069	1	M - XYLENE	19.131
024	1039462	36225	T	34.180	1	O - XYLENE	17.823
025	98816	2456		35.613			
026	34125	843	T	38.146			
027	1003162	19748	T	39.819	1	1,2-DICHLOROBENZENE	17.615*
028	30797	572		43.018			

* - NOT A TARGET compound

Mw 7/6/93

0062

WESTEN.

ADDITIONAL DOCUMENTATION

0063

SAMPLE PREP RECORD

Sheet no.: 1

Extract. Date: 06/30/93

Extraction Batch No: 93LV4302

Analyst: MJ

Method: N/A

Test: 0602

Cleanup Date:

Analyst:

Client: LE CARPENTER

LIMS Report Date: 07/13/93

Solvent:

Adsorbent:

Sample No:	Client Name Client ID	pH	Initial Surr. WT/VOL	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	t Solids	C/D FACTOR
9306L018-	LE CARPENTER									
001 X	MW-4	2.00	5	1.0	5		1.0	N	0.0	1.0
001 XS	MW-4	2.00	5	1.0	1.0	5	1.0	N	0.0	1.0
001 XT	MW-4	2.00	5	1.0	1.0	5	1.0	N	0.0	1.0
002 X	MW-14S	2.00	5	1.0		5	1.0	N	0.0	1.0
003 X	MW-22	2.00	5	1.0		5	1.0	N	0.0	1.0
003 X D1	MW-22	2.00	5.0	1.0		5	1.0	N	0.0	1.0
004 X	MW-25	2.00	5	1.0		5	1.0	N	0.0	1.0
005 X	TBLK	2.00	5	1.0		5	1.0	N	0.0	1.0
93LV4302-MB1 X		2.00	5	1.0		5	1.0	N	0.0	1.0
93LV4302-MB1 XS		2.00	5	1.0	1.0	5	1.0	N	0.0	1.0

Comments: SURROGATE 2574-09-05, MIX B 2574-27-02

Surrogate:

Spike:

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer

All dilution factors are 1 unless otherwise noted.

All CUV, BS, and surrogates are shot @ 20µL unless otherwise noted.

GC VOA ANALYSIS LOG

LOGBOOK # 3608

(CONTINUED FROM BOOK # 2999)

USED FROM 6/13/93 TO _____

STANDARD ID #'s
2574 - 27 - 01
↑ ↑ ↑
Book # Page # Sequence on
page

USERS OF THIS NOTEBOOK: Please record your signature in the space provided below.
Remember, the information recorded in this book can be used as legal evidence. It is **YOUR** responsibility to ensure that the information is true and accurate. General instructions for the completion of this notebook are included on the ensuing page.

Printed Name/Initials

Written Name/Initials

Matthew J Hocker MJH

Matthew JH

RFW # 21-21-022/C

Temp Program: Initial Temp: 45°

Hold: 3 min

Ramp: 8 °/min

Final Temp: 220°

Hold: 20 min

Ramp': 15 °/min

final Temp': 230°

Hold'; 5 min

WESTON®

GC VOA ANALYSIS LOG: 93
(YEAR)INSTRUMENT #: 43
DETECTOR: PID
CALIB. DATE: 6/29/93COLUMN TYPE: Sp 1000 1%
COLUMN SERIAL #: _____
TEMP OR TEMP PROGRAM: TPLOGBOOK #: 3608
ANALYST: m44
METHOD: 501.1 502.2 601 602 8010 8020

ANALYSIS DATE	TIME	RUN NO	STATION NO	RFW SAMPLE NUMBER	CLAS ID #	DILUTION FACTOR	COMMENTS
6/29/93	0946	1	2	STD B 20 PPB	06099343.01		2574-27-02
	1154	2	4	1		.02	2574-27-05
	1252	3	5	8		.03	2574-27-02
	1349	4	6	20		.04	
	1447	5	7	40		.05	
	1544	6	8	60		.06	
	1645	7	9	20 ↓		.07	↓
	1740	8	10	93LV4302-mBl's		.08	2574-27-02
	1838	9	11	↓ - mBl		.09	
	1935	10	12	9306L018-001 5ml		.10	
	2033	11	13	-0015 5ml		.11	2574-27-02
	2132	12	14	-0017 5ml		.12	
	2229	13	15	-002 5ml		.13	
↓	2327	14	16	-003 500ul		.14	10
6/30/93	0024	15	1	-003 5ml		.15	out of RANGE
↓	0122	16	2	↓ -004 5ml	↓	.16	

REVIEWED BY/DATE: _____

PAGE #

4

WESTON®

GC VOA ANALYSIS LOG:

93
(YEAR)

卷之三

INSTRUMENT #: 43
DETECTOR: PID
CALIB. DATE: 6/29/93

COLUMN TYPE: Sp1000 1%
COLUMN SERIAL #: _____
TEMP OR TEMP PROGRAM: TP

LOGBOOK #: 3608
ANALYST: mgm
METHOD: 501.1 502.2 601 602 8010 8020

RFW # 21-21-022/C-02/92

REVIEWED BY/DATE: _____

PAGE #

5

WESTON®

GC VOA ANALYSIS LOG: 93
(YEAR)INSTRUMENT #: 43
DETECTOR: PID
CALIB. DATE: 6/29/93COLUMN TYPE: SP1000 1%
COLUMN SERIAL #: _____
TEMP OR TEMP PROGRAM: TPLOGBOOK #: 3608
ANALYST: ZMF
METHOD: 501.1 502.2 601 602 8010 8020

ANALYSIS DATE	TIME	RUN NO	STATION NO	RFW SAMPLE NUMBER	CLAS ID #	DILUTION FACTOR	COMMENTS
6/29/93	1348	1	3	STD B 20 ppb	063093 43 .01		2574-27-02
	1451	2	4	93LV4302-mB1T		.02	↓
	1549	3	5	-mB1S		.03	↓
	1646	4	6	-mB1		.04	
	1808	5	7	↓ -mB1		.05	wed
	1859	6	8	9306L018-001 5ml		.06	
	1957	7	9	-001s 5ml		.07	2574-27-02
	2055	8	10	-001T 5ml		.08	↓
	2153	9	11	-002 5ml		.09	
	2250	10	12	-003 50ml		.10	100
2348	11	13	↓	-003 500ml		.11	10
7/1/93	0046	12	14	BLANK TUBE 8"		.12	
	0144	13	15	9306L018-004 5ml		.13	
	0242	14	16	↓ -005 5ml		.14	
	0339	15	1	STD B 20 ppb		.15	2574-27-02
0437	16	2	↓	↓		.16	JK

RFW # 21-21-022/C-02/92

REVIEWED BY/DATE: _____

PAGE #

6

WESTON®

GC VOA ANALYSIS LOG: 93
(YEAR)

INSTRUMENT #: 43
DETECTOR: PID
CALIB. DATE: 6/25/93

COLUMN TYPE: SP1000 1%
COLUMN SERIAL #: _____
TEMP OR TEMP PROGRAM: 7P

LOGBOOK #: 3608
ANALYST: M/H
METHOD: 501.1 502.2 601 602 8010 8020

REVIEWED BY/DATE: _____

PAGE #

TITLE

STANDARD Prep.

Project No.

Book No. 2574

From Pag. No.

2574-27-01

mix A @ 10 ug/ml in MeOH

2 ml mix A @ 20 ug/ml (2574-24-01)

1 ml MeOH (Baxter lot A2515)

4 ml mix A @ 10 ug/ml

TMR 4-6-93

2574-27-02

mix B @ 10 ug/ml in MeOH

2 ml mix B @ 20 ug/ml (2574-25-01)

2 ml MeOH (Baxter lot A2515)

4 ml mix B @ 10 ug/ml in MeOH

TMR 4-6-93

2574-27-03

mix C @ 10 ug/ml in MeOH

2 ml mix C @ 20 ug/ml (2574-26-01)

2 ml MeOH (Baxter lot A2515)

4 ml mix C @ 10 ug/ml

TMR 4-6-93

2574-27-04

mix A @ 1 ug/ml in MeOH

1 ml mix A @ 20 ug/ml (2574-24-01)

+ 3.8 ml MeOH (Baxter lot A2515)

4 ml mix A @ 1 ug/ml in MeOH

TMR 4-15-93

2574-27-05

mix B @ 1 ug/ml in MeOH

1 ml mix B @ 20 ug/ml (2574-25-01)

+ 3.8 ml MeOH (Baxter lot A2515)

4 ml @ tagfinal mix B @ 1 ug/ml

4-15-93

TMR

2574-27-06

mix C @ 1 ug/ml in MeOH

1 ml mix C @ 20 ug/ml (2574-26-01)

+ 3.8 ml MeOH (Baxter lot A2515)

4 ml mix C @ 1 ug/ml

4-15-93

TMR

Witnessed & Understood by me.

Date

Inventoried by

TMR

Date

To Page No.

6/8/93 00711

TITLE

STANDARDS Prep

Project No.

Book No. 2574

From Page No.

2574-25-01

mix B @ 50 ug/ml in MeOH

1ml purgeable B @ 200 ug/ml (below)

1.2ml VOA mix MOA (2574-23-01)

+ 8.8ml MeOH (Baxter lot A2515)

10 ml mix B @ 50 ug/ml in MeOH

m 4-6-93

**SUPELCO**SEPARATION TECHNOLOGIES
DIVISION OF RONIN AND HAASCat no 4-8852
Storage REFRIGERATE
Lot no - LA30216

FOR RESEARCH USE ONLY

Purgeable B

1ml methanol

DANGER-TOXIC-MAY BE FATAL IF SWALLOWED

DANGER-EXTREMELY FLAMMABLE

May be fatal if swallowed. May cause headache, nausea, blindness.

INGREDIENTS PER PA. R-T-K: benzene, bromodichloromethane, bromoform, 1,2-dichloroethane, trans-1,2-dichloroethylene, 1,3-dichloropropene, ethyl benzene, 1,1,2,2-tetrachloroethane, toluene, 1,1,1-trichloroethane

SUPELCO, INC. • Supelco Park • Bellefonte, PA 16823-0048 USA • Phone (814) 359-3441

Save This Data Sheet!
It Contains Important Information About This Product.

Purgeable B**Catalog No. 4-8852**Each constituent, except as noted, at 200 μ g/ml in methanol

trans-1,2-Dichloroethylene	Benzene
1,2-Dichloroethane	Bromoform
1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane
Bromodichloromethane	Toluene
trans-1,3-Dichloropropene [▲]	Ethylbenzene
cis-1,3-Dichloropropene [▲]	

[▲]400 μ g/ml total dichloropropene, composed of:19 percent trans-1,3-dichloropropene81 percent cis-1,3-dichloropropene as determined by FID.DS13281D
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Bellefonte, PA

To Page No.

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Date

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Date

4/6/93 071

Recorded by

TITLE

STANDARD Prep

Project No.

Book No. 2574

From Page No.

2574-23-01

VOG mix M02 @ 1,000 ug/ml
1ml m-xylene @ 10,000 ug/ml (2574-13-02)
1ml o-xylene @ 10,000 ug/ml (2574-18-03)
1ml 1,2-DCB @ 10,000 ug/ml (2574-13-04)
+7ml meth (Baxter lot A2515)

10ML VOG mix M02 @ 1,000 ug/ml

4-6-93 hr

2574-23-02

VOG mix P34 @ 1,000 ug/ml
1ml D-xylene @ 10,000 ug/ml (2574-13-03)
1ml 1,3 DCB @ 10,000 ug/ml (2574-13-05)
1ml 1,4 DCB @ 10,000 ug/ml (2574-13-06)
7ml meth (Baxter lot A2515)

10ml VOG mix P34 @ 1,000 ug/ml in meth

4-6-93 hr

4/5/93

MM

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MM

Date

6/8/93 0n 79

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TITLE Standard PrepsProject No. _____
Book No. 2574

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STANDARD ID	Compound	density	lot #	exp.	Amount of Comp.	Amount of MeOH*	Final Vol.	Final Conc
2574-13-01	+ chlorobenzene	1.106	62-127B	10/94	50 ul	5.48 ml	5.53 ml	10,000 uc
-02	+ m-xylene	1.9642	53-143A	3/94	100 ul	8.54 ml	8.64 ml	
-03	+ p-xylene	.8611	5d-38B	9/93	100 ul	8.51 ml	8.61 ml	
-04	+ 1,2-DCB	1.306	45-8B	3/93	50 ul	6.48 ml	6.53 ml	
-05	+ 1,3-DCB	1.288	65-21B	7/94	50 ul	6.39 ml	6.44 ml	
-06	+ 1,4-DCB	Solid	56-138B	6/94	.1g	10 ml	10 ml	
-07	Gasoline (93 oct.)	.756			100 ul	7.46 ml	7.56 ml	
-08	+ Cumene	1.862	87-69A	7/95	100 ul	8.50 ml	8.62 ml	

+ neat compounds from Chem Serv

1-29-93 mgf

* Baxter lot A2515

2574-13-09

VOG mix A @ 1,000 ug/ml in MeOH

1 ml chlorobenzene

2574-13-01

@ 10,000 ug/ml

1 ml m-xylene

-02

1 ml p-xylene

-03

1 ml 1,2-DCB

-04

1 ml 1,3-DCB

-05

1 ml 1,4-DCB

-06

4 ml MeOH

Baxter lot A2515

10 ml VOG mix A @ 1,000 ug/ml

1-29-93 mgf

C/C/G/2

M4

To Page No. _____

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Date

R. Sun 1/8/93

6/8/93

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6/8/93 0073

From Page No.

2574-18-01

Gas @ 100 ug/ml in meat

0.4 ml Gas @ 1,000 ug/ml (2574-17-05)
 + 3.6 ml MeOH (Baxter lot A2515) = 4ml @ 100 ug/ml
 Inf - 3-9-93

2574-18-02

8010-8020 mix @ 10 ug/ml

2ml mix 2 @ 20 ug/ml (2574-16-01)

+ 2ml mix 1 @ 20 ug/ml (2574-14-01)

4ml 8010-8020 mix

3-3-93

Inf

2574-18-03

O-xylene @ 10,000 ug/ml in meat

100 ul O-xylene (neat, Chem Serv) 7.88.88

+ 8.7 ml MeOH (Baxter lot A2515)

8.8 ml O-xylene @ 10,000 ug/ml

3-5-93

Inf

2574-18-04

USA mix B @ 1,000 ug/ml in meat

1 ml m-Xylene (2574-13-02)

1 ml O-xylene (2574-18-03)

1 ml 1,2-DCB (2574-13-04)

1 ml 1,3-DCB (2574-13-05)

1 ml 1,4-DCB (2574-13-06)

+ 5 ml MeOH (Baxter lot # A2515)

10 ml USA mix B @ 1,000 ug/ml

3-5-93

Inf

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